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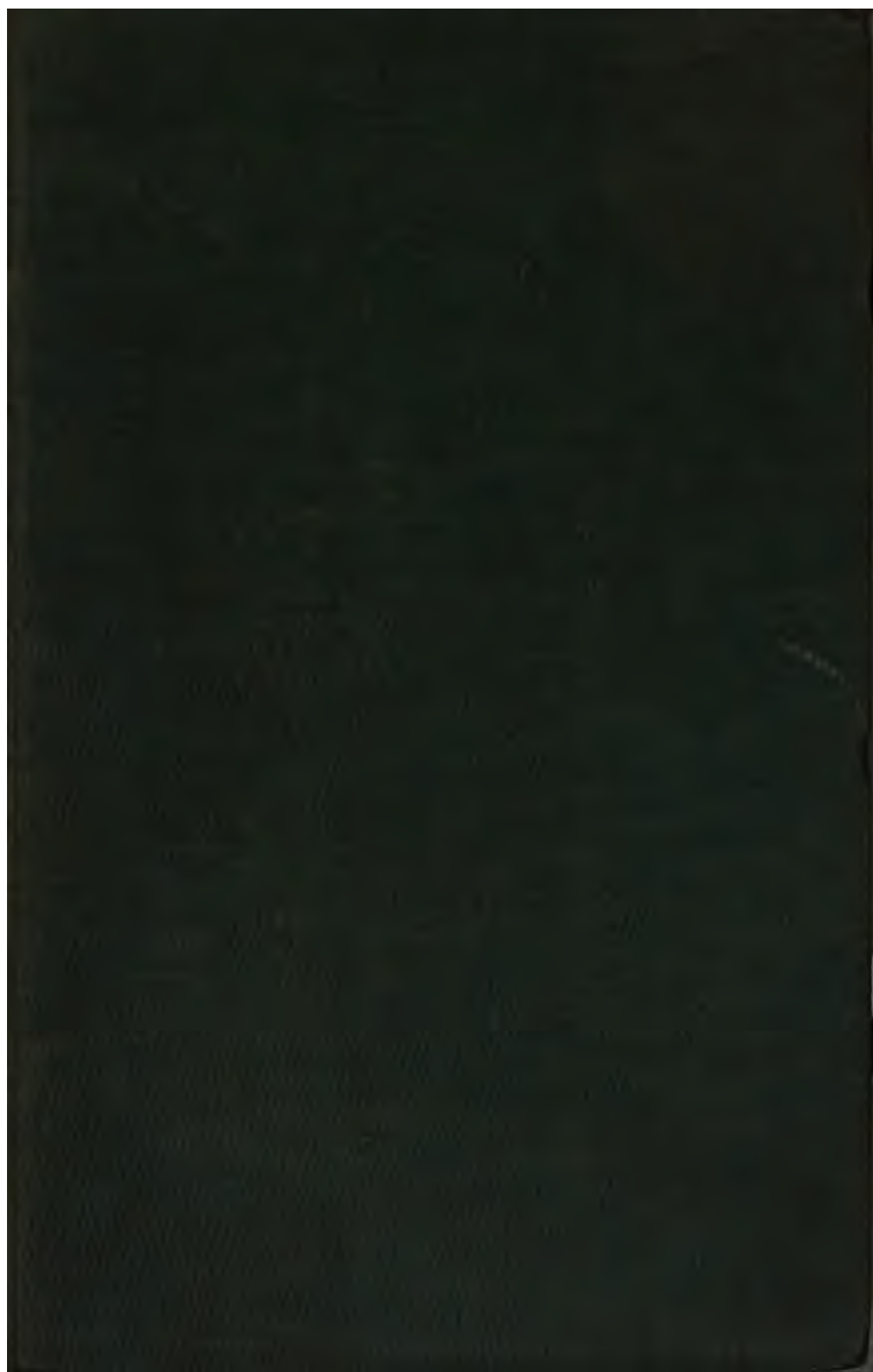
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THE
FLORICULTURAL CABINET



&

FLORIST'S MAGAZINE

1853

C. Cheval, Libraire.



THE
FLORICULTURAL CABINET,

AND

Florists' Magazine.

JANUARY TO DECEMBER, 1853.



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P R E F A C E.

IT is with very great pleasure we have to address our supporters on the completion of our TWENTY-FIRST VOLUME of the FLORICULTURAL CABINET. We stated at first what our object was : we have steadily pursued the course we then promised, and the continued and increasing support of our Correspondents, Subscribers, and Readers, fully testifies of the approval of our labours. In every successive Volume we have endeavoured to improve upon those previously issued ; and we hesitate not to assert, that the VOLUME FOR 1853 is superior, in its practical utility, to all others. This has been accomplished in consequence of the valuable assistance we have uniformly been favoured with by our Contributors, to whom we owe a debt of gratitude, which we more powerfully feel than we can express hereby. We beg, however, most respectfully to thank them for the services so generously and liberally rendered us, and solicit a continuance of their valuable aid ; and with that, we shall be enabled fully to realize in our next Volume an improvement even upon the present one. Several improvements are already arranged.

On all occasions it will be highly gratifying to us to meet the requirements of our readers, and information we respectfully solicit ; having ascertained their wants, immediate attention will be given thereto ; and we reiterate the assurance, that our utmost exertions will be employed to render our Magazine not only the *cheapest* of its class, but the most *useful* also.



Camellia
Countess of Essex



CAMELLIA JAPONICA, VARIETY.—COUNTESS OF ELLESMERE.

“Bring, Flora bring thy treasures here,
The pride of all the blooming year;
And let me thence a garland frame.”—SHENSTONE.

THE Camellia was first known in Europe from the accounts given by early travellers to China and Japan, who relate that they had seen in these countries rose-trees of the size of large oaks, having dark green shining leaves. Such accounts were considered fabulous till the Asiatic traveller, the Jesuit George Joseph Kamel (or Camellus, in honour of whom the Camellia takes its name), who visited Japan as a missionary in 1739, contrived to procure two plants of the single red, which he brought to Europe, and sold to Lord Petre for a considerable sum. His lordship had them sent to the gardens at Thornden-hall, in Essex, where, being kept in a hothouse temperature, they were killed. The gardener at Thornden, at that time, was a Mr. James Gordon, who, in 1742, commenced a nursery at Mile-end, near London. He, being somewhat aware of the value of so ornamental a plant as the Camellia, managed it so as soon to procure another plant, which he put out in the open border of a conservatory, where it continued to grow for ninety-four years, till the nursery was broken up to build upon in 1837; from it, it is supposed, many thousands of young plants had been raised as stools to bud, inarch, &c., the subsequent double kinds. It is generally understood that the Camellia was introduced into this country in 1792, but the above fact confirms the introduction from 1739 to 1742. Mr. Gordon died in 1780, and he had not only obtained the single red, but the double white and red striped. The single red, too, was figured in the *Botanical Magazine* in 1787, where it is observed that the plant will very probably be found as hardy as the *Laurustinus* or *Magnolia*.

The plant was then sold at a very high price, and in consequence prevented its being hazarded as trial.

The species and varieties introduced from China to this country, are, *C. euryoides*, white, *C. Japonica*, red, *C. Kissi*, white, *C. oleifera*, white, *C. reticulata*, red, and *C. Sasanqua*, single white, double white, semi-red, and double red.

Had the Camellia been a Greek, or Italian, or British plant, there would have been a great deal said of it by poets and lovers; and doubtless it makes a figure in the poetry of Japan. But unfortunately for our quotations, the Japanese have hitherto endeavoured to retain most of their good things to themselves. The Camellia *Sasanqua* is of smaller growth than any of the others, and in foliage and blossom very like the tea-shrub. The leaves have a very agreeable scent, and after being boiled, are used by the Japanese ladies to wash their hair. They are likewise often mixed with the tea-leaves to make the scent yet more agreeable. An oil, too, is expressed from the seeds of *C. Japonica*, which is constantly used in preparing food.

As a showy handsome flowering evergreen tree-like plant, the Camellia stands unequalled by any other yet introduced into our own country. Although we have had but few kinds introduced from Japan or China, the skill and management of British and Continental cultivators of Camellias by hybridizing, have much more than compensated for that deprivation, by the production of upwards of one thousand selected varieties, all of which are handsome, and many of them peculiarly so.

The very beautiful Camellia which we figure in our present Number, is an hybrid raised in the nursery of Messrs. Jackson, of Kingston, in Surrey. It is one of the handsomest, of fine form, and excellent habit. It merits a place in every collection.

Most of our readers are aware that the Camellia is quite hardy. Upwards of thirty years ago, we planted some in the open ground in Yorkshire, which flourished most admirably; each successive season bloomed profusely, and after a few years' growth, had thousands of flowers during April and May. Frost sometimes occurs in those months, and if sharp, the flowers are liable to be damaged by it; we always protected the plants when in bloom and such weather likely to occur. If the plants, even, had not a flower, they are worth growing out of doors; the fine evergreen shining foliage is especially handsome.

As it regards their management in-doors, several excellent articles on the subject have appeared in previous volumes of this Magazine. The following account of a most successful method of treatment has been forwarded us by Mr. John Burley, who has had very extensive collections under his charge.

COMPOST.—That which suits the Camellia far better than any other I have tried, is the following:—One-third good peat, one-third good hazel loam, and one-third half-decayed leaf mould, having a liberal sprinkling of sand in it, so as to keep it free. Let the loam and peat be broken into pieces about the size of walnuts, and the whole materials be well mixed together, and be used in potting in its rough broken state.

POTTING, &c.—Established Camellias should always be re-potted in *August*; turn them out of the pots, and remove all old soil you conveniently can without injuring the roots, then have a *clean pot* (never use the old pot unless it be thoroughly cleaned), and place a little rough soil over the crocks to allow a free course for the water, by keeping the crocks clear from the soil; then pot the plant, pressing the compost moderately firm, then water it so as to settle the soil properly about the roots. After extensive experience with the management of Camellias, I find them to flourish much better when re-potted at this period (*August*) than those shifted at any other season.

A short time after they have done blooming, let them be removed to a warmer house, and be kept well syringed over-head, when they will break out freely with strong fresh shoots, and when they cease growing, flower-buds will be produced on almost every shoot. When the blooming buds are thus provided, cease to syringe the plants over-head, as it sometimes starts them to a fresh growth, and the bloom is destroyed. After they have finished their growth, and blooming buds are formed, the plants must be removed to a less moist house; but still keep them warm and shaded until the flower-buds are fairly secured and attained a good size, when they may be removed into either a cool plant-house or frame, where they must be kept until the blooming season arrives. Particular care must be taken that during the period from the time of their removal from the warm house to the cool one, or frame (which removal will generally be about the middle of *July*), that they do not lack water, or the flower-buds will soon drop off. Allow a plant to flag but once even, and that will prove fatal in some degree; but by keeping the soil just duly *moist*, not *soddened*, and allowing the plants plenty of air, this fatal casualty will be prevented. When too great a number of flower-buds are produced, a proper portion must be taken away. By proper management, there never will be an unsightly naked Camellia, but if such come into the possession of any cultivator, let the plant cease blooming, place it, as is done with the general stock, in the warm house, and when it has been a week or ten days there, the sap will be moving rapidly; then, before the new shoots push, cut back the unsightly head, and the branches will break forth with a new supply of shoots. After the head is cut off, let the old shoots be syringed three or four times every day; it materially tends to promote the breaking forth of the new shoots.

NOTES ON NEW OR RARE PLANTS.

DENDROBIUM CRETACEUM. THE CHALK-WHITE FLOWERED.—Mr. Lobb sent this pretty flowering species to Messrs. Veitch, of Exeter. It has bloomed in their orchid-house. The flowers are produced along the branches, a foot or more of each, before any leaves appear. Each flower is about two inches across, of a chalky-white, with a few orange-coloured streaks on each side the middle portion of

the broad lip. The blossoms are produced singly, not in pairs as had been represented. (Figured in *Bot. Mag.*, 4686.)

ECHINOPSIS CRISTATA.—Mr. Bridges introduced this species, as well as a purple-flowered variety from Bolivia. It is of the flat melon-shaped section (Cactus of some), with spines an inch long. The tube of each flower is about six inches long, and the spreading part of the petals about eight inches across, of a creamy white, with the outer petals tinged with purple. It is remarkable for the great size and long tube of the flowers, in comparison with the short melon-shaped trunk or stem. It is in the collection of the Royal Gardens at Kew. (Figured in *Bot. Mag.*, 4687.)

HELICONIA PULVERULENTA.—This genus has the habit of the *Strelitzia*, the present species being from South America. It has recently bloomed in the stove at Kew. The large leaves are green above, but a powdery-white beneath. The flowers are small, narrow-petalled, a greenish-white, but at the termination of each floral stem there are several bracts, stiff, seven inches long, of a very rich crimson-scarlet colour. The stem of the plant at Kew is six feet high. It is a showy plant. (Figured in *Bot. Mag.*, 4685.)

HOYA FRATERNA. *Thick leaved.*—Mr. Lobb discovered this fine species in Java. It bloomed in the establishment of Messrs. Veitch during the whole of the past summer and autumn. Some of the leaves are a foot long, and three to five inches broad, very thick and firm. The flowers are produced in a closish umbel, of twelve or more blossoms in each. The flowers are on the upper side, between silky and velvety, of a pale yellowish-buff colour, but having five stains or spots radiating from the centre, and the honey from the central nectary is so diffused over the flower, as to give a rich brown tone of colour to the whole umbel of flowers,—a rich brown-red tint. Each blossom is three parts of an inch across. It is a noble and handsome flowering species. (Figured in *Bot. Mag.*, 4684.)

RAPHISTEMMA PULCHELLUM.—A stove-climbing plant, a native of the forests of Silhot. The plant and flowers are somewhat in the way of *Stephanotus floribundus*. Leaves six inches long, flowers in large pendent umbels, each blossom being an inch and a-half across, white, with a rose-stripe down the middle of each of the five divided flower. (Figured in *Paxton's Flower Garden*.)

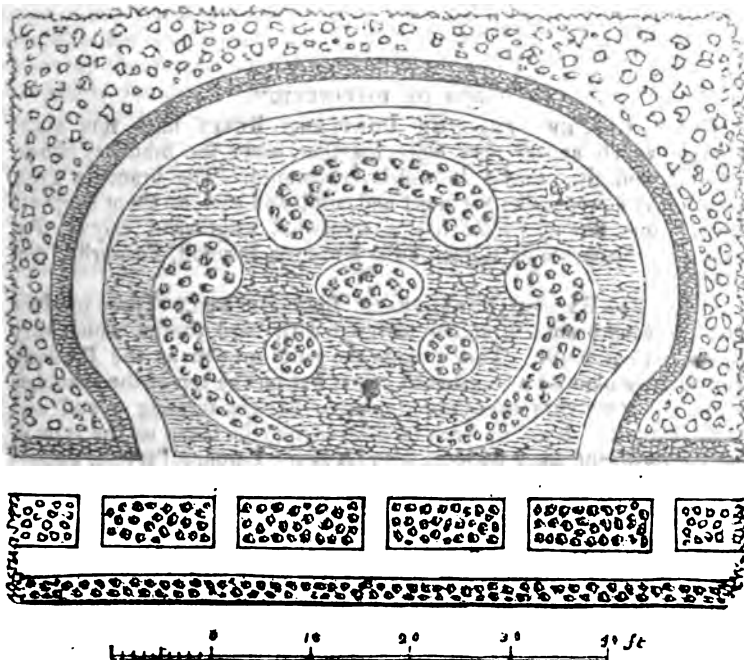
SALPIGLOSSIS COCCINEA.—A very handsome hybrid, which has been raised by some person residing near Colchester, and now in the possession of Messrs. Henderson, of Pine-Apple-place Nursery. It is similar to the other *Salpiglosses* in all respects but the colour of its flowers, which are of a clear vivid scarlet, with deeper-coloured veins at the throat of the blossom. The outside of the flower is yellow at first, afterwards has a red tinge. (Figured in *Paxton's Flower Garden*.)

VACCINIUM ERITHRYNUM. *Red-twigg.*—Messrs. Rollisson, of Tooting, received this very beautiful species from Java. It is an ever-

green, with thick oval-shaped leaves an inch and a-half long. The flowers are produced in many terminal racemes, each raceme having about a dozen blossoms, drooping, of a deep coral-red. A single flower is about half an inch long. The stems of the plant are red; it is shrubby, growing a foot and a half high. It is exceedingly handsome, and it merits a place in every shrubbery, and on every rockery. (Figured in *Bot. Mag.*, 4688.)

PLANS OF FLOWER-GARDENS.—BY T. RUTGER. ESQ.

No. 1.



THE east, south, and west sides of the annexed diagram for a flower garden on grass are supposed to be bounded by an evergreen hedge, and the north side by a wall, which, on its south side, is intended to be appropriated for choice climbers. An American border is given round against the evergreen hedges, and the clumps in the middle are to be on grass. The narrow border against the wall might be appropriated for *Gladioluses*, *Antholyzas*, &c., and the square clumps for masses of the most approved kinds of flowers. The oval and circular clumps on the grass may also be devoted to masses if approved of. The square clumps, and the narrow border against the wall, should have box-edgings.

DISTINCTION OF THE CLASSES OF ROSES.

THE following remarks on the classification of the Rose, with a description of their signs of distinction, will now be of use to your readers.—JAMES SMITH, *Cheshunt*.

M. Carriere divides Roses into seven main classes :

1. Perpetual or Portland Roses.
2. Hybrid Perpetuals from Portland.
3. Hybrid Perpetuals from Bourbon.
4. Bourbon Roses.
5. Noisette Roses.
6. Bengal Roses.
7. Tea Roses.

SIGNS OF DISTINCTION.

CLASS 1.—PERPETUAL OR PORTLAND ROSES have fine short thorns, which appear very close together, cover the branches almost entirely, and give them a brownish appearance. The branches grow erect ; the flower-stalks are short and stiff, and each of them supports usually one flower, which has a somewhat lengthened calyx. For example : Duchesse de Rohan, Julie Krudner, Bernard, Favourite, and others.

CLASS 2.—HYBRID PERPETUALS, from Portland.—These produce erect growing branches, and are covered with hard thorns, which vary in size and strength. They assume the same growth as the Portland Roses, have likewise a lengthened calyx, but on the top of the branches there are sometimes one, three, or seven flowers, forming a stiff and erect bouquet. Rose de Quatre Saisons may be taken as the type of their growth and their flowers ; also La Reine Baronne Prevost, Jaques Laffitte, Madame Laffay, Duchess of Sutherland, Amandine, Louis Bonaparte, Clementine Seringe, Gloire d'Angers, Comte de Montalivet, &c.

CLASS 3.—HYBRID PERPETUALS, from the Ile-Bourbon.—It seems that plants of this class keep the balance between Perpetual and Bourbon kinds ; they approach, however, in appearance more to the latter. The sepals of the calyx are generally very strongly fimbriated. The rounded form of the calyx is also another sign by which they may be distinguished from the Portland hybrids. An irregular and intricate position of the branches gives them a peculiar appearance. Examples are Clementine Duval, Comte de Bobinski, Ernestine de Barante, Colonel Foissy, Géant des Batailles, Vicomtesse de Bel-leval, &c.

CLASS 4.—BOURBON ROSES.—The wood of these is smooth ; their branches are sometimes short, terminating with a single flower ; but the buds of some kinds are strong, and produce vigorous shoots, on the tops of which appear from three to twelve flowers. The thorns at the base are strong, curved, and placed at some distance from each other. The sepals are oval, rounded, strong, fimbriated, smooth, and dark green. The calyx is rounded. It often happens that the branches of

some kinds in this class grow horizontally. Examples: *La Reine des Ile-Bourbon*, *Madame Desprez*, *Charles Souchet*, *Paul Joseph*, *Souvenir de la Malmaison*, *Souvenir du 4 Mai*, *Remond*, *Mrs. Bosanquet*, &c.

CLASS 5.—NOISETTE ROSES.—Their foliage has much resemblance to that of the Tea Roses, but their branches are more vigorous, much longer, and terminated by numerous flower-buds. The bark of the branches is smooth and thorny. Examples: *Lamarque*, *Ophyrie*, *Aimée Vibert*, *Rose Mille Ecus*, *Noisette Despriz*, &c.

CLASS 6.—BENGAL ROSES.—In this class the branches are nearly without thorns, the bark is smooth, the sepals are more or less prolonged and fimbriated, the branches seldom bear more than one flower. The calyx is rounded, the flowers have nearly always colour, whilst those of the Tea Roses (with which this class is in close relationship) are, with few exceptions, pale white or yellowish. It is also to be observed, the flowers of the Bengal Roses are very seldom scented. Examples: *Bengale Ordinaire*, *Cramoisie Supérieure*, *Prince Eugène*, *Eugène Hardy*, *Beaucarmin du Luxembourg*, *Augustine Hersan*, &c.

CLASS 7.—TEA ROSES.—The branches have a very smooth bark, and have not many thorns. The leaves are glossy, and the flowers appear on the top of the branches, which are slender and not very long. In most cases the weight of the flowers bends the branches, so that only their under side is seen. Vigorous examples produce sometimes stronger shoots, which are not so flexible, and bear three or often five flowers on their end, as *Devoniensis*, *Safrano*, *Souvenir*, *d'un Ami*, *Vicomtesse Decazes*, *Elisa Sauvage*, *Burés Goubault*, *Moiré*, &c.

WINTER BLOOMING FUCHSIAS.

BY MR. WILLIAM MOFFATT, OF BRETTY GARDENS.

Persons accustomed in the cultivation of pot plants are aware of the importance of allowing plants to remain a certain period of time in partial repose, and also that before again excited into growth the young shoots previously made should be thoroughly ripened. This is simply cause and effect, forced upon the observation of those whose duty it may be to attend to plant cultivation for any length of time. That this period of rest in vegetation is brought about by natural causes is evident; at the same time it must be admitted that plants are materially altered in habit by a long process of cultivation, and when under artificial treatment will, to a limited extent, grow, blossom, and ripen fruit and seed, independent of the influence of the sun's rays. This is exemplified by the many gay flowers that are to be seen in our greenhouses in the dull months of autumn and winter. True it is that many of them are forced into bloom by excited treatment, but this only shows what may be done to gratify the lovers of floral beauty at a season when less of the bright corolla is to be seen. It is an easy matter to mention a number of blooming plants which never at any season lose their due share of admiration; still I think the *Fuchsia* is seldom thought of as a winter flowering plant, if I except *Fuchsia ser-*

ratifolia, which I have seen in perfection by a process of treatment so simple as being plunged in the open border (without turning it out of the pot), allowing it to remain from May to August, or September, and then removing it to the greenhouse, where, with a fine growth of young flowering wood, it soon formed an object of attraction. The other light and dark varieties will, I have found, serve the same purpose by the following treatment:—From amongst those plants that were forced into bloom in the earlier part of spring, select those that indicate the freest habit of growth; expose them at the base of a south wall, or elsewhere, where they will be sufficiently exposed to the heat of the sun, and gradually withhold water, so as far as possible to prevent further growth and ripen the young shoots. About the end of August they should be potted into smaller-sized pots, and, after cutting back the young wood a short distance in accordance with the strength and formation of the plants, they should be plunged into a brisk bottom heat: in a short time they will push freely into growth, and make sufficient roots to enable them to flower profusely. When removed to the greenhouse they should not be exposed to cold draughts, so that the flowers may expand freely and remain longer on the plants. *Fuchsia serratifolia* seems different in habit from the others; probably it is from *Fuchsia fulgens*.—G. F.

TREATMENT OF LOTUS JACOBÆUS, AS A BEDDING PLANT.

BY MR. JOHN BURLEY, OF WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON.

THIS well-known and much-admired inhabitant of our greenhouses is one of the most charming bedding plants for the flower garden that we possess, and should be in every one. Its dark-velvet pea-flower shaped blossoms, its dwarf, bushy, habit, and the profusion of its flowers, alike combine to render it one of the most interesting plants for the garden.

It will be found to do well by the following method of treatment:—Cuttings should be put in in autumn; but if that opportunity be past, then early in spring; but the former is the best, the plants being strong by the following turning-out time. Take cuttings of the most likely young shoots, either from plants in the open ground, or in pots, and insert them in well-drained pots, giving plenty of room to each cutting, in order to prevent them fogging off, which they are very apt to do. The bottom of each cutting should not be more than a quarter of an inch below the surface of the white sand. After insertion, place the pot in moderate bottom heat for about a week, or until the bottom of the cuttings are caliced, when they may be removed to the shelf, in an airy part of the greenhouse. In this situation keep them till January, and then pot them into sixty-sized pots, and keep them in a close frame, or other similar place for a week or two, by which time they will be commencing growth again, and may have a due admission of air as the season advances, being kept in a frame or pit,—keeping them near to the glass, in order to prevent them being drawn up weakly. The prin-

cial thing to guard against in their young state is *damp*, as almost the least degree of it destroys them.

By the following May they will have made strong bushy plants. Let a bed be prepared, of light, but not *very rich* mould; for if too rich, they do not bloom so freely. Plant them out, with balls entire, at about ten inches apart; and if the succeeding season be a dry one, let them have a little water every evening, to assist them in speedy growth. By the early part of July they will begin to bloom, and will be beautiful throughout the season. A bed of them in profuse bloom resembles a spread-out dark-speckled velvet and green mantle. The plants so treated become quite bushy, fill the bed well, and rarely become more than nine inches high. They may be readily increased by seeds; but plants from cuttings bloom much more profusely.

DIELYTRA SPECTABILIS.



In a previous number of this Magazine, we noticed this beautiful flowering plant, but it appears, from several communications we have recently received, that there are many of our country readers who have

not yet seen the plant. We therefore give an engraved representation of its form of growth, and extend our remarks relative to its cultivation, &c.

A celebrated poetess of our own country, Mary Roberts, when writing upon flowers universally, and in her usual delightful strain, exclaims :

Ye " stars of earth," that radiantly
 Light up man's darksome road,
 Well did the poet deem of you,
 Who call'd you " smiles of God ! "
 Creation's morning saw your birth
 In Eden's blissful bowers ;
 And still on this sin-blighted earth,
 Ye shed a charm, sweet flowers !
 No solitude so drear and deep,
 But there, in light, are ye ;
 Breathing from vale or mountain steep
 Beauty and fragrantcy.

Amongst the universal constellation thus embraced, the *DIELYTRA SPECTABILIS* shines with peculiar lustre, being one of the most lovely.

Mr. Fortune, who was sent to CHINA to collect plants by the Horticultural Society, states he first saw the *Dielytra spectabilis* growing, along with the beautiful *Weigelia rosea*, in the artificial rocks, in the GROTTO-GARDEN, in the island of Chusan, that it is one of the plants of which the Chinese mandarins are so very fond, and that they cultivate with so much pride in all their gardens. Figures of it, in bloom, appear in many of the drawings of their most admired flowers on China ware. Mr. Fortune thus saw it in a state of *cultivation*, and we have not any clear account of its being seen *otherwise* than in cultivation. Linnæus, who *first* published it, does, it is true, give, in his " Species Plantarum," Siberia as its native country, and the late possessor of the Linnæan Herbarium, has added, " or Tartary." The original flowering specimen is in the Linnæan Herbarium. It appears to have been known only in *Northern* China, bearing the coldest atmosphere uninjured.

Since its introduction by the Horticultural Society to our own country, it has been liberally dispersed by the Society, and has been most successfully cultivated in our stoves, conservatories, green-houses, frames, and in the open air, where it proves to be quite hardy, and becomes a magnificent plant. We have had accounts of several fine grown plants, in both the south and north parts of England. It has been usually considered to be a plant which, when vigorous, grew from two to two and a half feet high, and of proportionate breadth ; but a correspondent recently sent us an account of its being grown in the open border in a gentleman's garden at Lexden-heath, near Colchester, to the following extraordinary size :

" The plant to which I allude was planted in 1850, and was then only a few inches high. During that year, and in 1851, it grew and flourished wonderfully, but this year, 1852, it has reached a size and form that very far surpasses anything of the kind that I have ever heard of. In the middle of August it became necessary to cut it

down, on account of its enormous size, to prevent it from destroying some neighbouring roses, and it then measured upwards of thirty feet in circumference, and five feet high. Between last April and August it frequently bore upwards of two hundred perfect spikes of flowers at once, and had not a single stem or branch broken by the wind, although it was in a very bleak and exposed situation. It was planted in the richest artificial soil that could be made, and during winter it is left wholly unprotected."

Although the plant can be grown to the above-named size, it forms a most charming bedding plant, growing from nine inches to a foot, or foot and a half high, blooming profusely. The richer and deeper the soil, the more vigorous it becomes; which can be promoted more or less by applying liquid manure. It is of such an accommodating character that it may be grown at any size desirable, by regulating the compost, &c., accordingly.

It is very easily propagated by cuttings of the young shoots, as is done with the Dahlia, and it strikes as freely. Plants raised from cuttings in spring, duly potted, &c., and turned out into the flower-garden, will begin to bloom about Midsummer, and continue to the end of the season. Plants struck during summer, and rested in autumn and winter, and put out into the border early in March, will bloom from the beginning of May, or earlier in warm situations.

Where established plants are already in the open ground, nothing more is required now than covering the plants over with dry leaves a few inches thick, and spreading a little soil to prevent their being blown away. This is sufficient winter protection for any part of Britain. After the decay of the flowering stems, in doors, its thick fleshy roots require to be kept dormant, similar to what is done with *Alstroemerias*, &c., and after a season of rest, the roots may be divided if required for increase, and the plant started into growth.

It is a charming plant for stove, green-house, sitting-room, or garden, and will flourish in any well-aspected window in town or country. Its long graceful racemes of drooping flowers are admired by all who see them. The outer petals are of a rich rosy-red, and the inner ones nearly white.

A PLANT MORPHOLOGICALLY CONSIDERED.

BY THE REV. DR. M'COSH, OF BRECHIN, READ TO THE BOTANICAL SOCIETY OF EDINBURGH.

ACCORDING to the common idea, a Plant is composed of two essentially distinct parts, the stem and the leaf. The axis of the embryo proceeds downward and upward simultaneously, the descending axis being the root, and the ascending one the stem or trunk. Upon these axes others are formed as subterranean or aerial branches. The leaf is formed upon the ascending axis, and besides its common form, it assumes, while obeying the same fundamental laws, certain other forms, as in the sepals, the petals, the stamens and pistils. This makes a plant a dual, or composed of two essentially different parts. But to us it appears possible to reduce a plant by a more enlarged conception of

its nature to an unity. According to our idea, it consists essentially of a stem sending out other stems similar to itself at certain angles, and in such a regular manner that the whole is made to take a predetermined form. The ascending axis, for instance, sends out at particular normal angles in each tree branches similar in structure to itself. These lateral branches again send out branchlets of a like nature with themselves, and at much the same angles. The whole tree with its branches thus comes to be of the same general form as every individual branch, and every branch with its branchlets comes to be a type of the whole plant in its skeleton and outline.

Taking this idea of a plant along with us, let us now inquire whether there may not be a morphological analogy between the stems and the ribs or veins of the leaf. As these veins are vascular bundles, proceeding from the fibro-vascular bundles of the stem, they may be found to obey the same laws. Physiological confirmations of this presumption may be found in the following circumstances:—(1.) Both stem and vein are capable of becoming a spine, the stem as in the Thorn, the vein as in the Thistle. (2.) It is also an unsettled question whether the inflorescence and seed-vessels in many cases are formed out of metamorphosed leaves or metamorphosed branches. The very fact that there is such a dispute shows that there is an analogy between leaf and branch. (3.) The vein of the leaf is capable, equally with the stem, of producing a leaf bud, as in *Bryophyllum* and *Gloxinia*.

We begin with the examination of those plants which have a fully veined or reticulated leaf, and here we shall find a morphological analogy between the leaf and the branch, and the leaf and the whole plant. It should be noticed that this resemblance can be observed only when both the stems and the veins are fully and fairly developed. Let us first inspect, in a general way, the leaf of a tree with its central vein or veins, and its side veins. Even on the most careless inspection, the central vein will be found to bear a striking analogy to the central stem or axis of the tree, and the side veins to the branches. Let us, then, look at the tree when stripped of its leaves in winter, and we shall see how like it is in its contour and skeleton to the contour and skeleton of a leaf. We shall be particularly struck with this, if we view it in the dim twilight or the "pale moonlight" between us and a clear sky. In both leaf and tree we see a central stem or stems with ramified appendages going off at certain angles; and we may observe that the tree, in its outline, tends to assume the form of a leaf.

The general impression produced by a first glance will be confirmed on further inspection. The analogy between the skeleton of the leaf and the skeleton of the branch may be seen in a number of points, as well as in the general resemblance between the ramification of the plant and the ramification of the venation of the leaf. (1.) Some trees, such as the Beech, the Elm, the Oak, the Holly, the Portugal and Bay Laurels, the Privet, the Box, will be found to send out side branches along the axis from the root, or near the very root; and the leaves of those trees have little or no petiole or leaf stalk, but begin to expand from nearly the very place where the leaf springs from the stem. There are other trees, as the Common Sycamore (the Scotch Plane-Tree), the

Peach, the Chestnut, the Pear, the Cherry, the Apple, which have a considerably long unbranched trunk, and the leaves of these trees will be found to have a pretty long leaf stalk. (2.) Most of our low-branching herbaceous plants, such as the Mallow, Rhubarb, Tussilago, Marsh Marigold, Lady's Mantle, Hollyhocks, send out a considerable number of stems from near the root; and it will be found in exact accordance with this that those set off from the base of the leaf a considerable number of main veins or ribs, which, as they spread, cause the leaf to assume a rounded shape. In these plants the morphological resemblance between tree and plant is seen *horizontally* and not *vertically*. In this respect these plants are different from our forest-trees, which send up commonly one main axis with lateral branches, and have in their venation one leading vein with side veins. (3.) Some trees, such as the Beech, the Birch, the Elm, send up one large main stem, from which, throughout its length, there proceed comparatively small branches, pretty equal along the axis, and it will be found in such cases that the leaf has a central vein with pretty equally disposed veins on either side. Other trees, again, tend rather to send off at particular heights a number of comparatively thick branches at once. This is the case, for instance, with the common Sycamore, the Chestnut, and the Laburnum. The trunk of the Sycamore (*Acer Pseudo platanus*), about eight or ten feet above the surface of the ground, commonly divides itself into four or five large branches, and, in precise analogy, we find the leaf at the top of a pretty long leafstalk sending off four or five large veins. The Chestnut tends to send off at the top of the unbranched trunk a still greater number of branches; and we find, in correspondence with this, that its leaf is commonly divided into seven leaflets. The Laburnum (and also the Broom and Clover) goes off in triplets in respect of leaflet and ramification. In such cases it will commonly be found that the leaf is compound; and we are to regard *all such compound leaves as one, and representative of the whole tree*. Generally it is the whole leafage coming off at a given place which represents the whole tree, and the single leaf, when there are a number of leaves, represents merely the branch. (4.) Some plants, such as the Rhododendron, the Azalea, and the Lupine, send off leaves which have a tendency to become whorled, and their branches have also a tendency to become verticillate. (5.) The stems of some trees, such as the Thorn and Laburnum, are not straight, and the branches have a twisted form; and it will be found that the vein of the leaf of these trees is not straight, and that the leafage is not in one plane. This is also seen in the Elm. (6.) In some trees, such as the Beech, the stems go off in nearly straight lines, and the leaves are found to have a straight venation. In other trees, again, such as the Chestnut, the branches have a graceful curve, and the veins of the leaves are curved in much the same way. (7.) In most plants, the angle at which the side stems go off will be found to widen as we ascend to the middle, and thence to decrease as we ascend to the apex, and the venation of the leaves will be found to obey a similar law. This helps to give both to tree and leaf their beautiful oval outline. In some plants, again, such as the Poplar and Birch, the angles are widest at the base, and tend to narrow as we

ascend ; and both leaf and tree, in such cases, assume a kind of triangular form. (8.) Generally we shall find a correspondence between the angle of the ramification of the tree and the angle of venation of the leaf. We have made a sufficient number of measurements to be able to say that there is often such a correspondence. But it should be acknowledged, that while it is not difficult to determine the angle of the venation of the leaf, it is most difficult to determine what is the normal ramification of the tree ; for the angle at which the branch goes off is liable to be modified by a great number of circumstances. All that we argue for is a general correspondence between the tendency of the direction of the branches and the tendency of the direction of the veins of the leafage ; a tendency liable, however, to be affected by a great number of circumstances, natural and artificial. *It is always to be remembered, that it is the whole leafage coming out at a given place, which represents the tree ;* and the single leaf, where there are more leaves than one, represents the branch or the young tree. It is only thus that I can bring the Ash and Mountain Ash into accordance with these views. The whole leafage with its stalk represents the tree, and the leaf branch and leaflet the branches and branchlets, as also the young tree.

CULTURE OF THE ALLAMANDA CATHARTICA.

BY MR. F. THORNE, OF SHUCKBURGH PARK.

THIS fine blooming hothouse climber derives its name from Dr. F. Allamand, formerly a Professor at Leyden. It was introduced into England in 1785 ; and although it has been so many years, yet it is not usually grown and bloomed as it is capable of, and its merits entitle it to. In my opinion, there is not another stove plant more easy of cultivation, and it has the additional excellence of not being subject to the attacks of any kind of insect. I have had it growing by the side of *Stephanotus floribunda* for some months, a plant which every grower well knows is very liable to the attacks of the white bug, and we may term it almost a bug-breeder. Its large orange-coloured blossoms, combined with a long continuation of bloom, renders it highly attractive and beautiful. It is not so much cultivated as it deserves ; it ought to be in every collection of stove plants.

Cuttings from the young wood will strike freely in sand, and the pot plunged to the rim, where there is bottom heat at about seventy degrees ; give but little water, as the cuttings are very apt to damp off. Plants struck the early part of summer, will make fine flowering specimens the following season. A cutting of 1851 was potted last May, into a twelve-inch pot, using leaf-mould and loam, in equal portions with one-fourth silver sand. In this compost it grew vigorously ; and being trained to a trellis, by the end of July the trellis was completely furnished with young wood, at which time it began to produce flowers at the extremities, and had a succession of bloom for four months from each shoot. Similar to the Oleander, during the period of growth and flowering, it requires water daily, and sometimes twice, according to the temperature of the atmosphere. A little liquid manure, applied occa-

sionally, greatly promotes the size of its fine funnel-shaped bloom, which are from three to four inches in diameter. During winter, it has but little water—just enough to preserve life, and to give it a season of *rest*.

Early in March, the side shoots are pruned into one eye, and the plant disrooted and repotted into the same sized pot, then plunged in bottom heat until the roots are fairly established. Plants managed in this way will last for many years, in the same sized pots and trellises, and are brought into a flowering state much earlier than they are when planted in a conservatory *border*, as the roots require to be contracted, in order to have them bloom at an early stage of growth. It grows freely in compost of equal parts of one year old turfy loam, sandy peat, and well-rotted cowdung, with leaf-mould.

A FLORAL TREAT.

BEING a constant reader of your Magazine, and observing that remarks on the Camellia but seldom appear therein, I am induced to forward you some particulars of a magnificent collection of these noble flowering plants, grown and bloomed with extraordinary success, very far beyond any I have seen elsewhere, in the nursery establishment of Messrs. Lucombe and Pince, of Exeter.

During the past season, I had the pleasure of a visit to that place, and previous thereto, a friend of mine called my attention to the Camellias, adding, "You will behold the richest floral treat in that class of plants you ever beheld." I confess I was a little scrupulous as to that, having in various parts of England seen celebrated collections, and very superb plants; but on entering the Camellia-house at Exeter nursery, I was struck dumb with amazement, and almost fancied myself in "a more genial country and clime." The house is about 200 feet long, and of a proportionate width and height, where the plants were growing in the greatest luxuriance, permanently planted out in the bed, resembling huge laurels, some of which were about fifteen feet high, and more than half that across, feathered from top to bottom with regular branches of the beautiful shining evergreen foliage, and literally covered to the very summit by one entire mass of flowers. I observed splendid plants of *Chandlerii*, *Donkelaarii*, and *Bealii*, and Duke of Devonshire in profuse bloom.

The following is the method of treatment, by which such magnificent, luxuriant plants are produced:—*Compost*. Two parts of good turfy peat, one part of strong hazel loam, having previously been one year in stack, with the addition of one-sixth the quantity of the others of good gritty sand, these were properly mixed together, and having a very liberal drainage. During the period of growth, *liberal* supplies of water are given, and as much given at each watering as will moisten *all* the soil. During summer the house is kept as cool as possible by the admission of air. The roof of the house only is glass, and but little fire is given at any time, only just enough to keep the frost from the plants.

LISIANTHUS RUSSELLIANUS.

BY AN AMATEUR GROWER.

THIS most beautiful flowering plant is seldom seen now-a-days. One or two made their appearance at the London Exhibitions the past season, which I hope will revive its merited popularity. Why it is so seldom grown, I suppose, arises from some mistaken apprehension of its being very difficult to cultivate in a satisfactory manner. I am aware some valuable instructions as to its successful management have appeared in former volumes of this Magazine, but such may not be in the possession of every present reader; I therefore hand you a few general remarks on the mode of treatment which has given the most satisfactory results.

Seed can be procured of the seedsmen; sow it on finely-sifted leaf soil and sandy peat; below may be of rougher materials of the same kind, and a free drainage.

Seed may be procured of most of the seedsmen. At the end of February sow the seed. Take equal parts of leaf mould and boggy peat, well broken together; fill one-third of the depth of a pot with drainage, and over it the compost; press the top even, and upon it spread a portion of silver sand—a quarter of an inch will do; sprinkle it with water, sow the seed thinly, and just cover it with sand; then cover it with a bell-glass, and place it in a hot-bed frame. Pot the plants singly, as soon as large enough, in small pots, keeping them in the frame, giving them plenty of water overhead; and if the pots were placed in a shallow trough, or each on a saucer, allowing an inch deep of water, they will be advantaged by it; repot as required, so that they may, by the end of summer, be in large-sized sixties or forty-eights. Water *very sparingly* during autumn and winter, but do not allow one drop to fall upon the leaves. Keep the plants near the glass, in the warmest part of a dry greenhouse, or cool part of a stove. Early in February remove them into a warmer situation,—forcing-pit, or cucumber-frame, &c., to push them a little, and as soon as they begin to grow, repot them “entire balls” into large pots to bloom. They still must be kept in the frame or forcing-house; a moist heat they *must* have, and be liberally supplied with water, new milk warm, and twice a week with liquid manure.—*An Amateur.*

MISCELLANEOUS SECTION.

“ABSORPTION AND FIXATION OF MANURE BY EARTHS.—All earths suited to the proper culture of good vegetables in general come under the denomination of loams, which must be understood to comprise varying proportions of sand, clay, iron, and carbonate of lime (chalk), sand and clay being the preponderating constituents. Loams absorb manures, and hold them fast; thus (while themselves being converted to soil) they prepare the decomposable matters that they have absorbed, and bring them into the condition of raw sap—a fluid which the plant

can alone attract as its essential aliment. Sand, and that fine earth called peat or moor-soil, though suitable to the hair-rooted tribes, do not retain manures, and therefore are designated hungry, being incapable of sustaining the higher vegetable crops. These facts comprise the leading principles of the sublime theory which it is our object to render plain and comprehensible.

"The dark fluid which runs too much to waste from dung-hills and compost heaps, is fitted for the purpose of experiment; or, in lieu of it, a good substitute can be easily prepared by infusing a quart measure of horse-droppings that have been collected two or three months (and so far fermented as to be somewhat blackened), in a gallon of boiling, pure rain water. As dung in the state described has acquired a portion of the peculiar product of decay called *humus*, two fluid drachms (equal to about a dessert spoonful) of strong liquor of *pure ammonia*, are to be added when the heat is much reduced. The whole should then be stirred repeatedly, and thus left to digest for twenty-four hours, when the ammonia will have united with the humus matter, and a deep brown liquid manure will be the result. It should be clearly understood that any kind of such fluid, however prepared, from the excrements of animals or of poultry, whether recently made and sweet, or in a state of decay and fetid, will answer equally well; but the foregoing preparation is recommended to enable the inquiring operator to 'begin at the beginning,' and thus to make himself acquainted with every individual process. When the mixture has remained undisturbed for some hours after the last stirring, the liquor should be strained through a cloth or flannel drainer, and kept in a bottle or covered jug for future operations."—*J. Towers, Esq., Magazine of Botany.*

IN-DOOR PLANTS.—As the plants are placed in or near windows, there is no injurious deficiency of light; but as it comes to them most intensely on one side, they should be half turned round every day, that their heads may have a uniform appearance, and the leaves be not turned only in one direction. If the window faces the south, the intense heat and light should be mitigated during the mid-day of the summer months by lowering the blind. Whenever the out-door temperature is not below 34°, the plants will be benefited by having the window and door of the room open. They cannot have too much fresh air at any season of the year, if they are not grown under a Wardian case; for the exterior air always contains a due proportion of moisture, whilst the air of a room is as invariably drier than is beneficial to the plants. A due supply of moisture in the air, as well as in the soil, is absolutely necessary to our room plants. To obtain this in the best available degree, little porous troughs, constantly filled with water, should be kept on the stand among the pots; and the saucers of the pots themselves, if made according to Hunt's plan, may always have a little water remaining in them. The application of water to the soil requires far more attention than it usually receives. Room plants mostly are the *protégés* of ladies, who administer water with their own hands, and so long as the novelty and leisure prompt to this attention all goes well; but no room plant ever existed, perhaps, which was not, at some period of its life, left to the tender mercies of a housemaid, with the frequent

usual consequences of a deluge of water, cold from the pump, after the roots had become heated and parched by days of total abstinence. Plants so treated cannot flourish. The water should be allowed to stand in the kitchen for some hours before it is applied to the plants, so that it may be as warm or warmer than the soil to which it is to be added. It may be given in dry, hot weather every second day, and in such abundance as to pass slightly through the earth into the saucers. —*American Gardeners' Chronicle.*

GLASS WALLS. HORTICULTURAL SOCIETY'S GARDEN, TURNHAM GREEN.—In our last account of this establishment we announced that the example of Mr. Ewin's glass walls, about which so much interest has everywhere been excited, was put up, though the painting and other details connected with its erection were not quite finished. These are now completed, and it is being planted. In one-half are Vines and Figs, which are intended to be permanent, together with the large plant of *Psidium Cattleianum*, which formerly grew in a tub in the curvilinear Vinery, and the other half contains flowering plants, such as Camellias, Oranges, *Euonymus fimbriatus*, Fuchsias, Clematis, Roses, *Escallonia macrantha*, and things of that description; so that not only will the value of these walls be tested as regards the production of fruit, but also that of flowers. Of their excellence in both respects, there can be little doubt; but of that more hereafter. While on the subject of new fruit-producing contrivances, we may mention that the Peaches on the tree covered by Cottam and Hallen's Peach-frame are not so far advanced as those on neighbouring trees on the open wall. This is somewhat remarkable, inasmuch as very excellent results have been obtained from facing trees with glazed sashes, in other parts of the country. The crop on the rest of the wall is progressing as favourably as could be desired, and the trees are in the best possible condition, being furnished, in most cases, with plenty of healthy foliage to the very ground. —*Gardener's Chronicle.*

VERONICA ANDERSONI.—Early in spring I purchased a small plant, and as it is a quick grower, I repotted into one twelve inches across, in a compost of equal parts of fresh loam, leaf-mould, and old rotten cow-dung, with a sprinkling of bits of charcoal. I placed in a pit-frame till May, and then plunged it up to the rim in the ground in the open garden, where it was duly attended to with water and training. It remained there till the end of September, and then removed into the greenhouse. The plant is erect, four feet high, with side branches from the bottom to the very top, except the last part of the principal leading shoot. Each side shoot has a terminal flowering spike of from three to six inches long, in all fifty-two spikes. The flowers vary in colour according to age, being pale blue, rose, and white. It is one of the most ornamental plants for autumn decoration of a greenhouse, conservatory, entrance-hall, or sitting-room. Small plants, too, I find bloom very abundantly. It is a cheap plant, easy to cultivate, and readily increased by cuttings. It is an hybrid raised between *Veronica speciosa* and *Veronica salicifolia*.



ROSES and Hollyhocks should be planted immediately, or will not bloom well this year. Add *fresh loam* to flower-beds, it always promotes an abundance of flowers, also give manure, leaf mould, &c. Frost paves the path for it to be done without injury to walks or grass. Have all standard Roses, and other like growing plants, well secured by a stake. Nothing is equal to **THE ROSE GIRDLE**, sold by Mr. Hamilton, 156, Cheapside, cheap and valuable.

FLORIST'S FLOWERS.—Auriculas and Polyanthuses should only be kept *just moist* (not wet), and be *just preserved* from frost. If the embryo flower be affected by frost, it is always injurious; give air, however, on every likely occasion. Sow seed early this month. Carnations, Picotees, and Pinks in pots require to have air freely, but water sparingly. Protect from excess of rain. Prepare compost for the former *now*.

Pinks and *Pansies* in beds require that the lateral branches are secured by pegs or sticks from injury by wind. Fir or Yew branches, a foot or so high, pricked round or in the bed, is an excellent protection from wind. A sprinkling of soot over the bed tends to preserve Pinks from rabbits and snails.

Ranunculuses and *Anemones* planted last autumn protect from frost. The bed for planting in *next month* should now be turned over for the last time; pick out all worms, and give it a slight sprinkling of lime; then spread the bed evenly, and it will be consolidated by the planting period. *Choice Hyacinths* protect, an inverted garden-pot will do. *Dahlia* roots stored safely from frost are not necessarily secure from decay. The best sorts, if a large stock is desired, will now require potting and placing in the frame. *Tulips* still guard from frost, for they rarely throw up perfect blooms if touched by frost. Divide and replant herbaceous perennials, &c. If autumn sowing of annuals was omitted, now sow some in small pots, place them in a frame, and turn them out in the beds early in April: such will bloom early.

IN THE FORCING STOVE.

Sow seeds of tender annuals, as Cockscomb, Amaranthus, &c., to have them fine specimens for the greenhouse in summer; and Ten-week, Russian, and Prussian Stocks, &c., to bloom early, should be sown in pots, or be sown upon a slight hot-bed; also some other of the *half-tender* kinds, to prepare them strong for early summer blooming.

The Jacobæ and other Amaryllises, should be repotted; also to have a few early blooming plants of Achimenes, Gloxinias, Gesnerias, &c.,

they should be started, and when beginning to push, separate and pot singly.

Cuttings of Salvias, Fuchsias, Heliotropes, Geraniums, Anagallis, Himimeris, Bouvardia, &c., desired for planting out in beds, should now be struck. Now sow Mignonette, to bloom early in boxes or pots, or to turn out in the open borders.

IN THE GREENHOUSE, &c.

Never give heat to Heaths as long as frost can be kept out by coverings. A few degrees of frost will never injure Cape Heaths, whereas fires are their ruin. Let the air *blow* upon them on all favourable occasions: so with the entire class of *New Holland* plants. *Azalea indica* required for the purpose of propagation by cuttings, may be transferred to a warm temperature to excite an early growth. Cuttings will be found to root much better *early* in the season than at a later period. Re-pot Cinerarias, Gladioli, Alstrœmeria, Liliun, &c. Calceolarias—re-pot seedlings, strike cuttings. AVOID DAMP.

Fuchsias which have been at rest, and *increase* is wanted, force them into shoots to strike from.

IN THE STOVE.

The plants best adapted for forcing are Roses, Persian Lilacs, *Azaleas*, *Acacia armata*, *Neriums*, *Gardenias*, *Rhodora*, *Heliotropes*, *Correas*, *Deutzeas*, *Mezereums*, *Coronillas*, *Cytissus*, *Ribes*, *Mignonette*, *Cinerarias*, Sweet Violets, Lily of the Valley, Cactus, *Cyclamens*, and the old *Eranthemum pulchellum* with its fine blue flowers, *Justicia speciosa*, *carnea*, and *flavescens*, *Gesneriæ Zebrina*, *Poinsettia*, *pulcherrima*, and *Aphelandria cristata*, are fine winter-blooming plants.

BRIEF REMARKS.

UNITY IN LANDSCAPE GARDENING.—Unity, or the production of a whole, is a leading principle of the highest importance in every art of taste or design, without which no satisfactory result can be realized. This arises from the fact, that the mind can only attend, with pleasure and satisfaction, to one object, or one composite sensation at the same time. If two distinct objects, or classes of objects, present themselves at once to us, we can only attend satisfactorily to one by withdrawing our attention for the time from the other. Hence the necessity of a reference to this leading principle of unity. In landscape gardening, violations of the principle of unity are often to be met with, and they are always indicative of the absence of correct taste in art. Looking upon a landscape from the windows of a villa residence, we sometimes see a considerable portion of the view embraced by the eye laid out in natural groups of trees and shrubs, and upon one side, or perhaps in the middle of the same scene, a formal avenue leading directly up to the house. Such a view can never appear a satisfactory whole, because we experience a confusion of sensations in contemplating it. There is an evident incongruity in bringing two modes of arranging plantations so totally different under the eye at one moment, which distracts rather than pleases the mind. In this example the avenue, taken by itself, may be a beautiful object, and the grapes and connected masses may in themselves be elegant, yet if the two portions are seen together they will not form a whole, because they cannot make a composite idea. For the same reason there is something unpleasant in the introduction of fruit-trees among elegant ornamental trees on a lawn, or even in assembling together in the same beds flowering plants and culinary vegetables—one class of vegetation suggesting the useful and homely alone to the mind, and the other avowedly only the ornamental. In all works of art which command universal admiration, we discover a unity of concep-

tion and composition, a unity of taste and execution. To assemble in a single composition forms which are discordant, and portions dissimilar in plan, can only afford pleasure for a short time to tasteless minds or those fond of trifling and puerile conceits. The production of an accordant whole is, on the contrary, capable of affording the most permanent enjoyment to educated minds everywhere, and at all periods of time.—*Downing on Landscape Gardening.*

WINTERING CARNATIONS AND PICOTEES.—I observe in a recent number a correspondent complains of his plants being much affected with the black spot on the leaves. It will be more prevalent this excessive wet autumn, and as a remedy, the leaves must all be carefully brushed over with a small soft brush, and carefully cut away any decayed leaves, or points of such. Keep them clean by a repetition of this attention once a fortnight, and give all possible air to the plants (only save them from wet overhead) at front and back, so that a current passes through; by this means the plants will become what is termed "stocky," robust, and not spindled up weakly ones. If the frame faces to the north it is best, as it tends to keep the plants back, and to become stiff and bushy. If a little sulphur be sprinkled on each dark spot, it will stop its progress.—*An Old Practitioner.*

IRRIGATING LAND.—The following remarks were drawn up more particularly in reference to Agriculture; but as the principle will equally apply to Floriculture, &c., we therefore introduce it into our pages.

Irrigation.—The mode in which irrigation benefits meadows is still doubtful; but I have no doubt whatever that the phenomenon is a complex and not a simple one; I mean that the causes of action are more than one, or even than two. It is important to clear up this point, as by doing so we shall then understand better how to proceed with the investigation in future. The deposition of solid matter held in suspension is unquestionably one principle mode of action, but assuredly not the only one, for a clear spring issuing from the hill-side sometimes begins to act at once upon vegetation as it were from the cradle. Not only are the waters of a muddy river and of a crystal brook different, but, as Sir Stafford Northcote's gutterer, Mr. Ellis, informed me, the effect is distinct and sometimes opposite. A thick stream, experience shows, improves the condition of land—a clear stream may even impoverish the soil, though it brings the Grass forward. There is no paradox here, if we consider that the turbid water adds permanently to the soil: the clear water, by stimulating the herbage, occasions elements of vegetable life to be withdrawn from it. If successive crops then be removed without any return of manure, the natural result will be impoverishment. It is certain, moreover, that clear water itself has two modes of action. First, by salts, it may hold in solution ammonia, for instance, derived from the farm-yard, and very probably also ammonia brought up by deep-seated springs from the depths of the earth. Here let me remark, since landowners have, I know, been deterred from attempts at irrigation by the absence of lime from their streams, that while, on the one hand, streams flowing from chalk hills are undoubtedly good, softness, on the other hand, is the test of the best water in Devonshire, the classic land of hill-side irrigation. The remaining cause of action is certainly warmth, and even here the action may be also a double one. Warm springs, it is well known, are the most effective, imparting, no doubt, their temperature to the ground; but all streams probably, when made to pass over land, impede the radiation of heat; that is, check the escape of warmth from the ground. Whatever the cause may be, the effect of irrigation in improving land far exceeds any other known method. Some time ago, I gave a statement of the number of sheep kept by me on a water-meadow, which was thought by many to be a mistaken one. I can now say, that this year the yield of my water-meadows has been further increased; and that on a piece of poor peaty land, recently irrigated, the fifth crop of Italian Rye-grass has been already severed, two crops being cut and three fed off; all the crops bulky, and produced by the simple stream only, not by any liquid manure. The application of the water in dry summers is, I find, an important advantage gained in addition. I said formerly, that it involved some risk of rot to the sheep, and I did not escape the rot altogether myself two years ago; but, by using more precautions, I find the advantage greatly preponderate. If, as appears, land can now be irrigated at the cost of 1*l.* per acre, the profit will be at least 100 per cent.; for no farmer can doubt that the yearly value of the land must be increased to the extent of 1*l.* at the lowest. I must, therefore, once more advise those who have streams at command, and poor land that can be flooded, to examine for themselves the west country catch-meadows, especially those recently made by Mr. Smith upon Exmoor.—*Mr. Pusey, in the Journal of the Agricultural Society, Vol. XIII.*

VEGETATION OF THE CAPE OF GOOD HOPE.—The passage from India to the Cape of Good Hope had been so short, that the mind still retained a lively impression of the

former. What a contrast was thus produced ! Instead of the dense jungle there appeared a ridge of mountains but thinly covered with verdure ; instead of the large foliage of the tropics, low, hard-leaved bushes ; instead of the noble timber, no trees except those taken by man under his particular care ; and instead of the elegant festoons of airy Rattans, the leafless *Vrouwenhaar* (*Cassyta filiformis*, Linn.), which, as if to humble the pride of that tribe from which poets are wont to select their wreath, hangs slovenly over the branches of the *Rhus glabra*. Nevertheless, to a European the Cape flora presents a most pleasing aspect. He is no longer perplexed, as in the forests of equinoctial America or Asia, by the curious habits and strange foliage of the vegetation, but meets at every step forms which have for centuries not only been cultivated in botanic gardens, but have become naturalized in every cottage of his native soil ; the *Heatha*, the *Ice-plants*, the *Geraniums*, the *Callas*, and many others, are welcome sights, recalling to mind many a happy scene ; and even the botanist, if on one hand he must regret that he fails to discover additional genera and species, on the other, cannot but rejoice that his favourite sciences has already made such progress as to render so remote a portion of the globe, in aspect at least, familiar. The neighbourhood of Simon's Town consists of a ridge of rugged mountains, which are chiefly composed of sandstone, and present, especially during the dry season, the time of our visit, a barren and uninviting appearance. Like many similar localities, however, it is very productive, and, on account of its climate, by far richer than the vicinity of Cape Town. *Proteaceae* are particularly abundant. The *Protea cynaroides*, Linn., may be seen in the greatest perfection, producing heads frequently more than eight inches in diameter. It is, however, less frequent than its congener, the *Protea grandiflora*, Thunb., which indeed is so common that it imparts a bluish hue to some places, and thus forms a peculiar feature in the landscape. The colonists call it *Wagenboom*, and employ its wood to make felloes, a purpose for which, on account of its toughness, it is admirably adapted. The *Wagenboom* is from eight to fourteen feet high, and supplies, like several other *Proteaceae*, the principal fuel of Simon's Town. We can hardly reconcile ourselves with the idea that any one should be so inconsiderate as to cut down plants which we esteem so highly, and on whose structure and cultivation so many learned treatises have been written. I must confess that when witnessing the proceeding for the first time, my feelings were almost akin to those of a soldier in a certain comedy, who, on entering France, discovers to his surprise that even the children speak French, a language which hitherto he had considered merely as an accomplishment of adults. I was much struck with the *Myrica cordifolia*, Linn., which covers whole tracts of the downs, and appears at first sight to be about two or three feet high ; on a closer inspection, however, it becomes evident that what seems to be little bushes are only the branches of subterranean trees ! I succeeded in freeing several from the sand—not a very difficult operation—and found regular stems creeping a few inches below the surface, and attaining, in some instances, as much as sixty feet in length. The plant performs, therefore, the same office at the Cape as several *Carices* in Northern Europe—that of keeping down the loose shifting sand. Another plant, which both man and nature have applied to the same purpose, is the *Paarde Vygen* (*Mesembryanthemum edule*, Linn.). On the road between Simon's Town and Wynberg whole acres are planted with it. The vernacular name of the latter, I may add, has occasionally been confounded with that of an allied species, the *M. acinaciforme*, Linn. The plant called *Hottentots' Vygin* or *Paarde Vygen* (*Hottentots' Fig* or *Horse-fig*) is the *M. elude*, Linn., while that termed *Zyre Vygen* (*Sour Fig*) is the *M. acinaciforme*, Linn., and not *vice versa*, as some authors have it. The ravines proved at this season the most profitable localities, abounding in *Lobeliaceae*, *Epilobium villosum*, Thunb., a supposed variety of *E. hirsutum*, Linn., *Gomphocarpus fruticosus*, R. Br., *Psoralea pinnata*, Linn., *P. aphylla*, Linn., *Richardia Æthiopica*, Kunth, *Ferns*, *Briza maxima*, Linn., *Nerine Sarniensis*, *Brunias*, *Lycopodia*, *Phyllicas*, *Jungermannias*, and the *Kwee grass* (*Cynodon Dactylon*, Pers.). The latter forms an excellent turf, and seems to stand a remarkable degree of drought without changing its natural colour. The *Richardia* (*Calla*) *Æthiopica* is called *Verkenbladen* (*Pigs'-leaf*). The colonists tell an anecdote of it which shows what a mere name may sometimes do. A lady of the Cape, who visited Holland, was invited to see a most beautiful plant from her own country. She was conducted to a greenhouse, and the proprietor was just on the point of delivering an eloquent panegyric, when the visitor exclaimed : " Why, these are nothing but pig leaves ! " The Dutchman was quite shocked that any one should have such bad taste as to apply to so fine a production such an unpoetical name. Yet it is a question which of the two, *Richardia Æthiopica* or *Verkenbladen* is the most expressive ; the one indicates the native country, the other the use of the plant. Swine are very fond of the leaves of this plant. On Thursday,

March 13th, Messrs. Zeyher, Rour, and Juritz, and myself ascended Table Mountain. Mr. Ecklon would have joined the party, but being far advanced in years, and debilitated by a prolonged residence in a hot country, he feared that he should not be able to reach the top. We started at dawn, and took the usual road up the kloof. Never have I enjoyed an excursion so much. The day was beautifully clear, the company delightful, and Mr. Zeyher made so many interesting remarks on the different plants, that time seemed to fly with more than its usual speed. At an elevation of 1,000 feet we found a grove of the *Leucadendron argenteum*, R. Br., which produces its branches in whorls, and with the regularity of the pine. It is the only indigenous tree I saw in the Cape Town district; for the *Virgilia Capensis*, Lam., which is frequent, has been brought, according to Mr. Zeyher, from some distant part of the colony, and the others from Europe, Asia, America, Australia—in fine, from every part of the globe. A strange mixture, indeed, is thus produced. Here stands a tall *Eucalyptus* near the *Populus tupa*, there the *Nicotiana glauca* in company with the *Cypress* of the Levant and the *Casuarina* of the Indian Archipelago; all apparently growing as vigorously as in their native soil. It was nearly ten o'clock when we reached the summit. Most places generally fall short of the expectations formed of them, but never was I more disappointed than with Table Mountain. During my travels I have visited several mountains far more deserving of renown than this; the Montana, or Galera de Chorchia, in Veragua, is certainly more regular, larger, and bolder in outline. The view of the town, the bay, and the island, however, and the surrounding flora, made up in some measure for the disappointment. Having taken our breakfast near a little fountain, we commenced ransacking the platform. The *Disa ferruginea*, Swartz, was plentiful; but of the *Herachelia coelestis*, R. Br., one of the rarest plants of the country, only a few specimens could be found, as some previous visitors, probably attracted by its lovely colour, had gathered a whole bunch, which they had left behind. On descending a few hundred feet we came to a valley. There the *Disa grandiflora*, Linn., probably the finest of all terrestrial Orchideæ, grew in great perfection on the sides of rivulets, places which during the wet season are entirely under water. We collected a sufficient number of specimens, and continuing our ramble, met with the *Erica lutea*, *E. cornuta*, *E. glutinosa*, *Harveya tabata*.—*Seemann*, in *Hooker's Journal*.

NEW AND SUPERB CARNATIONS AND PICOTEES. *Carnations*.—General Mack, Puxley's, C. B., Friar Lawrence, May's, R. F., Acca, Puxley's, S. F., Poor Tom, May's, R. F., Benedict, May's, R. F., Magnificent, Schofield's, R. F.

Picotees.—Lady Macbeth, May's, heavy red-edged, Lavinia, May's, medium-edged red, &c., &c.

Theodore (Buswell), heavy-edged red.

Ann (Schofield), ditto ditto.

Bianca (May), heavy P. E.

Bridesmaid (Matthews), light ditto.

Countess (Fellowes), heavy ditto.

Diadem (Fellowes), ditto ditto.

Haidee (Fellowes), light ditto.

Lady Franklin (Merryweather), light purple edge.

Calliope (May), medium rose edge.

Julia (May), heavy scarlet edge.

Rosalind (May), medium rose edge.

Unexpected (Marris), heavy rose edge.

Victoria Regina (Marris), heavy scarlet edge.

We pride ourselves upon growing a *selection*, and we would not willingly introduce a second-rate into our stock. Some of the above are of the rarest magnificence, as may be readily imagined when we state, Lady Macbeth excels in splendour the far-famed Mrs. Norman; and fine as the light purples at present in cultivation are, Ophelia, Ganymede, &c., Bridesmaid and Haidee completely distance them. In heavy roses, Julia is exceedingly fine, and Marris's Victoria Regina, now at length, after our long patience, to be had, queen-like, *leads the class*. Of flowers out last season, add to your collection Ringleader (Marsden), S. B. It is a "Curzon" flower, fine in form and texture, bright in colour, and well defined. Companion (Netherwood), P. F., a northern variety, and Warrior, C. B., a Lancashire flower, we have a good report of; but these we have not seen.—(*E. S. Dodwell, Midland Florist.*)

PREPARING PELARGONIUMS FOR CUTTING-DOWN.—This treatment is an essential one in the proper cultivation of this admired flowering-tribe. To do this aright is not generally known, and of course not practised. To continue watering them, as heretofore,

up to the time of cutting-down is wrong, and the stems left will rarely break freely, and the entire plant is much injured, and often perishes. When the plants have done blooming, place them in an open situation, but where rain will not fall upon them, and for a fortnight, at least, do not give them any water, or lay them down on their sides, which will answer too. This process tends to lessen the sap and retard its motion, the perspiring and elaborating influences render the shoots in proportion more firm, and the sap becomes duly organized. It is essential always to get the stems well ripened, and then the plants, and cuttings too, will, under due treatment, answer every expectation. After this preparation, cut in the shoots to as few buds as you please, *all* will push shoots—but when the stems are unripe and fleshy, perhaps one bud might push, and even such rarely grow well afterwards. When the ripe wood has been shortened, do not give water for a few days after, then only a little, in four or five days a little more, and the new shoots must break their buds before a regular watering is given. When the shoots are an inch or so long, the plants will require repotting, and the extra new shoots be taken away.

AN EXHIBITOR.

PINK BEDS.—I am an old Pink-grower, in a northern county, where the perfect full lacing of every petal is a desideratum. In this particular, we northern florists excel the southern considerably—such are my conclusions from what I have seen at the London exhibitions. Now, in order to have full perfect lacing, let the plants have food to induce it; give the bed about eight inches deep of *old* rotten dung to the same depth of good loam. If you do this at the end of July, let the bed settle, and at the end of August plant in it. In February following, lay three or four inches more dung over the surface of the bed, and just cover it with good loam; the rains will filter through it, and *laced* flowers you will have to perfection. Of course where the buds are too numerous, they are thinned, one only to each stem, and one of these too are cut away. I also grow some of the best in similar compost, in large pots, with success, though never had the blooms as large as the others—but it affords the advantage of getting the blooms forward, or keeping them back, for an exhibition.

A NORTH COUNTRY FLORIST.

DAPHNE INDICA RUBRA. This is a capital plant for the greenhouse, blooming much freer than the white-flowered, and it is of easier culture. I am a Covent-garden Florist, and grow a vast number for the purpose of its cut flowers. It strikes freely from cuttings of the new shoots, cutting them off with a small portion of the old wood—that is, as close to it as possible, and insert them in silver-sand, sinking the pot in a medium hotbed, and covered with a bell-glass. The readiest method to get blooming plants, is to have a number of the common *Daphne laureola*, in pots, and graft the *D. indica rubra* upon these stocks, doing it on the tongue system. The pots should be placed in gentle bottom heat, and the union is soon effected. The strong plants having bloomed, have all the shoots cut back to about one-half their length, and then are placed in a gentle hotbed-frame, or forcing-house, and when the new shoots are just beginning to push, the plants are repotted, in equal parts of peat and leaf-mould, having a liberal sprinkling of silver-sand. When the shoots have pushed a due length, the ends are stopped, they push again and are stopped; then they are removed into the open air in a sheltered situation, open to the sun, to ripen their wood, and then removed to a shady border till the end of September, when they are taken into a greenhouse, and a portion forced successively as wanted. J. B. S.

CAPE PELARGONIUMS.—On a former occasion I sent some observations on this very interesting and pretty tribe of plants. During the past season, there has been a marked improvement in the specimen shown, both in the form of the plants, and the freedom of bloom. Under the term "Cape Pelargoniums," of course are included, as usual, several genera, besides *Pelargoniums*, as *Campylia*, *Phymatanthus*, &c. One of the exhibitors, "a celebrated one," gave me the following particulars of his mode of culture: compost, one part of year old turfy-loam to two of peat, with a portion of old-rotten cow-dung, and a liberal sprinkling of white sand; also a free drainage. A few bits of charcoal, or broken stones are scattered amongst it. After the plants have done blooming, water is gradually lessened, so as to give them a resting season. This class of plants has not, "generally" numerous roots, so that due care is necessary not to over water them. Some kinds are liable to become naked, but this class of plants bears cutting in, and somewhat bushy plants, as were the collection my friend exhibited the past summer. I have taken descriptive notes of a number, which I will forward for the next month's Magazine.

A LONDON MERCHANT.



Delphinium Hendersonii



DELPHINIUM HENDERSONII.

THE generic name *Delphinium* is derived from the Greek, *Delphin*, signifying a *Dolphin*, because the flower-buds, before they are expanded, in shape resemble that fish. Its common English name of *Larkspur* has been given, in consequence of the horn-shaped *nectary* of the flower being in form like the spur of a lark's foot. It also is called Lark's-claws, Lark's-toes, and Lark's-heel. In France it is also called Knight's-spur, and Royal Comfrey. In Italy, Little-spur and King-flower.

GERARD mentions the Larkspur amongst the flowers which were cultivated in the reign of Queen Elizabeth, but he does not seem to have been acquainted with any in its *double* state. In the early part of the seventeenth century there were one or more varieties having *double* flowers, and which, we are told, were eagerly sought after. It appears to have been about the period when the *florimania* raged to such excess amongst the Dutch that the first *double* ones were raised, as we find the double-blossomed noticed by Parkinson, in 1629, who speaks of the great varieties of colours in these *double*-flowered Larkspurs; and he remarks, that the loss of the spur occurred when the blossom was double. From the *blue*-coloured flowers a good ink has been made, with the addition of a little alum.

That a flower of so much elegance of shape and so beautiful in the variety of its colouring, as the Larkspur is, should have been suffered to pass unnoticed by English poets, appears surprising; for the lively and delicate hues of the flower—as blue, rose, violet, white, pink, lilac, &c., produce a most beautiful appearance in the flower-garden, either grown singly or in masses. A bed of the dwarfer sorts of mixed colours is exceedingly handsome when in bloom.

In floral language, the Larkspur is made the emblem of *lightness*—

an appellation which the graceful airiness with which these flowers are placed on the branches truly justifies.

This fine flowering genus now contains fifty-eight hardy herbaceous perennial species and varieties, besides the numerous annual ones. Some of the perennials grow from six to eight feet high; their very long spikes of flowers are very ornamental, and at the back part of a boundary border of a flower-garden have a very interesting appearance. The dwarf-growing are admirable for the beds of mixed perennials, and deserve a place in every flower-garden.

Some *very superior* varieties have been raised within the last few years; viz., Beauty of Charonne, Mooreii, Wheelerii, Weltonii, Fulgens, Magnificum, and the one we figure in our present Number, viz., D. Hendersonii. It was raised by M. Chauviere, nurseryman of Paris, from D. chinense, impregnated by D. elatum-splendens. It is of a *bushy* habit, about eighteen inches high, fine large foliage, a *profuse* bloomer, and continues flowering to the end of summer; we had it in fine bloom at the end of October. It is an admirable plant for a bed, or grown singly, and ought to be in every flower-garden. Its very large rich blue blossoms, with such a distinct white eye, are exceedingly pretty. It was sent out last year by Messrs. Henderson, of Wellington Nursery, St. John's Wood.

NOTES ON NEW OR RARE PLANTS.

ABELIA UNIFLORA.—Messrs. Standish and Noble received it from Mr. Fortune, who discovered it in the north of China. It is a spreading small shrub, having perennial, broadish lance-shaped leaves, about three inches long. The flowers are produced two or three together on one principal footstalk, which arises at the base of each leaf. They are borne in profusion for several inches of the terminal portion of the numerous shoots. Each flower is somewhat funnel-shaped, the tube being an inch long, terminating in a five-parted spreading mouth (limb), white, tinged with rose. The calyx leaves are of a rich brown-red, and form a pretty contrast with the corolla. The abundance of flowers give it somewhat the appearance of a narrow-leaved Weigelia rosea in profuse bloom. It flourishes in the open ground in the nursery at Bagshot, and proves to be a charming acquisition. (Figured in *Bot. Mag.*, 4,694.)

ALSTROMERIA PLANTAGINEA.—Mons. de Jonghe, of Brussels, obtained this very handsome flowering species from Brazil. It is a herbaceous plant, with erect stiff stems, each terminating in a large umbel of flowers. Each blossom is an inch and a half long, bell-shaped, a deep orange outside, yellow within, tipped with green, and spotted with longish dots of rich brown. It is exceedingly handsome, and ought to be in every collection. It requires a similar treatment to the general stock of Alstromerias. (Figured in *Flora des Serres*.)

AQUILEGIA KANAORIENSIS (Kanaor Columbine).—Dr. Thompson sent this plant from Western Himalaya to the Royal Gardens of Kew. Somewhat resembles our common Columbine, but of a dwarfer habit.

The flowers are of a purplish-blue, and the points of the petals tipped with white. (Figured in *Bot. Mag.* 4,693.)

BEGONIA RUBRO-VENIA (Red-veined).—This very pretty species has been sent from Bootan to Thomas Nuttall, Esq., of Rainhill, near Preston, in Lancashire. It is a dwarf-growing plant, having largeish leaves, and the red floral stems, rising about nine inches high, each terminating in a corymbose head of blossoms. Each flower is an inch across, and the two inner sepals are pure white, whilst the other two, larger in size, are white, beautifully veined with red, having a very interesting appearance. Like most of the Begonias, it is a valuable plant for winter and early spring ornament. (Figured in *Bot. Mag.* 4,689.)

BEGONIA THWAITESII.—This very handsome new species has been sent to the Royal Gardens of Kew by Mr. Thwaites, Superintendent of the Botanic Garden at Peradenia, in Ceylon. The floral stems only rise about four inches high, terminating in a head of blossoms, white tinged with pink, each flower an inch across. The leaves proceed direct from the crowns of the thick fleshy roots, each footstalk about four inches long, and the heart-shaped leaf about five inches across. When young the upper side is of a lively green, edged with rosy-red, having several irregular formed markings of a different green, and the under side is of a bright rosy-red. When the leaves have attained their full size, the upper side is of a glaucous green, having a broad, deep red-purple edging, and there are several irregular bright green markings over the surface. The under side is of a rich red-purple, with several bright green spots. The leaves of the plant are exceedingly handsome, and render the plant deserving a place in every stove. (Figured in *Bot. Mag.*, 4,692.)

COLENS MACRAEI.—Mr. Thwaites sent this *Salvia*-like flowering plant from the Botanic Gardens in Ceylon to the Royal Gardens of Kew, where, in the stove, it bloomed in profusion during the summer and autumn of 1852. The leaves are oval, large, green above, beneath of a deep purple, producing a fine appearance. The flowers, somewhat *salvia*-like, of middle size, are white, with a large purple blotch on the upper lip, and are very pretty. The flowers are produced very numerously in large rosy-purple coloured stalks, branching panicles, and for a considerable period. It forms a fine numerously branched plant, two to three feet high. (Figured in *Bot. Mag.*)

COMACLINIUM AURANTIACUM (Synonyme, *Tithonia splendens*).—A half-hardy perennial plant, belonging to the natural order of composites, and has much the appearance of an African Marigold, having scarlet *Zinnia* blossoms. Mr. Van Houtte, of Belgium, received it from Central America, and during the last summer it was planted out under a wall in front of a stove and bloomed beautifully. It grows from one to three feet high, branching and flowering freely.

DIELYTRA CHRYSANTHA (the Golden-flowered). The lamented Douglas first discovered this plant in California; but recently Mr. Lobb met with it in California, and sent seeds to Messrs. Veitch, of Exeter, in whose nursery it has bloomed. It is a hardy perennial; stem tall, leafy, branching. The foliage is finely cut, like others of the *Fumarias*,

of a glaucous-green. The flowers are produced numerous in stiff branching large panicles, and are of a rich golden-yellow colour. Each blossom is about an inch long, and stands erect, not drooping like those of *Dielytra spectabilis*. It is very handsome, and merits a place in every flower-garden. (Figured in *Paxton's Flower-Garden*, 103.)

FUCHSIA MINIATA.—A native of New Grenada, somewhat like *F. venusta*, having long tubular flowers. The tube is a rich red, sepals same, tipped with green, and the corolla scarlet. Mr. Linden introduced it into Belgium.

LÆLIOPSIS DOMINGENSIS.—This very pretty flowering orchid was originally found on trees in St. Domingo by Mr. Makenzie. It has recently bloomed in Messrs. Henderson's orchid-house at Pine-apple-place Nursery, at Mr. Rucker's, and Mr. Farmer's, of Nonsuch-Park, in Surrey. Each flower stem rises about a foot, terminating with a head of about eight blossoms; sepals and petals lilac, and the large labellum is a rosy-red, with the inside of the tubular part white, with a stain of yellow. Each flower is about an inch and a half long, on a footstalk an inch long. It is exceedingly pretty. (Figured in *Paxton's Flower-Garden*, 105.)

LILIUM CANADENSE, VAR. OCCIDENTALE.—This is a native of California, with flowers in form like the Scarlet Martagon. They are of an orange-colour, spotted numerous with crimson. It has long grassy leaves, and as many as ten in a whorl around the stem. It is very handsome, and was introduced by the Horticultural Society.

MERIANIA KARSTENII.—A stove plant belonging to the Melastomads. Each flower is as large as an apple-blossom, of a rich crimson colour. Mr. Van Houtte says it is a rival to the splendid *Pleroma elegans*. It deserves a place in every stove.

RHODODENDRON LOUIS PHILLIPPE.—A magnificent *hardy* hybrid between *R. ponticum* and *R. arboreum*. It is a very free bloomer, and the blossoms are of a brilliant crimson-red colour, beautifully spotted with rich dark purple. This very superb variety was raised by Mons. Bertin, of Versailles, ten years ago, but only first bloomed in 1846. Plants can now be purchased, and it merits a place in every collection of such like shrubs.

ROGIERA CORDATA (Synonyme, *Rondoletia cordata*). A very handsome blooming stove shrub, the flowers being produced in cymous heads of a beautiful rose-colour. It has been introduced by Mr. Van Houtte, of Belgium, and is a valuable acquisition, being a charming companion to the handsome *Rondoletia speciosa major*.

SENECIO CONCOLOR.—A native of the Cape of Good Hope. The flowers are in form much like a *Cineraria*, two inches across, of a rich purple colour. It is a charming herbaceous greenhouse plant, blooming from the beginning of August to the end of summer. It will prove to be a capital bedding plant also. It is in the Horticultural Society's garden.

SIPHOCAMPYLUS PENDULIFLORUS.—It is a half-climbing hot-house species, with beautiful rose-coloured flowers, which are produced, when the plants become well established, in profusion. It is a charming species, and its climbing habit distinguishes it greatly from any other

species. M. Linden introduced it into Belgium ; Mr. Van Houtte has had plants of it in bloom.

SPATHODEA CAMPANULATA.—This magnificent flowering plant belongs to the *Begonia* order. It is a native of Western Africa, from whence it was first introduced by Mr. Whitfield. It is a stove plant, having Ash-tree-like foliage. The flowers are bell-shaped, but when fully blown are very similar to a Tulip when over-blown. They are produced in large racemes, each having from six to eight blossoms. The flowers are of firm, leathery substance, and of a fiery-orange colour. Each blossom is about five inches across, and numerous large panicles of such fine splendid blossoms render it highly ornamental. A fine plant of it has bloomed at Chatsworth.

CULTURE OF THE RANUNCULUS.

BY MR. CAREY TYSO, FLORIST, WALLINGFORD, BERKSHIRE.

THE very beautiful, gaily-coloured Ranunculus, that gives such splendour to our vernal parterres, is a species of Crowfoot, that grows naturally in Persia, and other eastern countries, from whence it has been brought to beautify our own highly-favoured island.

The Turks cultivated the Asiatic Ranunculus at Constantinople for several ages before it was generally known in other parts of Europe. In their language it is called Tarobolus Catamariale, and their account is, that a vizir, named Cara Mustapha, who delighted to contemplate the beauties of Nature in solitude, first observed amongst the herbage of the fields this hitherto neglected flower, and wishing to inspire the then reigning sultan with a taste for flowers similar to his own, he decorated the gardens of the seraglio with this new flower, which he soon found had attracted the notice of his sovereign, upon which he caused it to be brought from all parts of the east, where varieties could be found. But enclosed within the inaccessible walls of the seraglio, those flowers remained unseen by the rest of the world, until bribery, which surmounts the loftiest towers, and breaks the strongest bolts, entered the palace of the sultan, and secured the roots of these highly-cherished plants, which soon afterwards flourished in the gardens of every court in Europe.

French writers, however, state, that this charming flower was one of the fruits of the Crusades, and that St. Louis first brought it into that country. This would be as early as the middle of the thirteenth century. In the time of Queen Elizabeth, Gerard tells us, in his "Herbal" of that reign, "that one kind of Ranunculus groweth naturally in and about Constantinople, from whence there hath been brought plants at divers times, but they have perished by the long journey, or want of skill in the bringers." Clusius saith, however, that he then received "a plant fresh and greene, the which a domestically theefe stole forth of his garden." The Dutch, who studied floriculture as an art connected with trade, soon obtained it; and turned the cultivation of the Ranunculus to a profitable account. The English, however, have

raised a far greater number of beautiful varieties than any other nation, and during the last century the flower was held in high estimation, and was deemed the handsomest ornament of the flower-garden. Since that period its charms have increased with each following year by the addition of still more perfect formed flowers, and of increased beauty, justly entitling them to a place in every flower-garden.

Agreeable to the request of a correspondent in this Magazine, that I should furnish some particulars respecting the Ranunculus, and give a list of a few of the best varieties, I have sent the present communication; and the following observations relative to its treatment are suitable for this season:

The earliest claims on the attention of the cultivator of this charming flower are the procuring of good sorts, and the preparation of the bed to receive them. Were this the middle of summer, I should recommend the turning of compost to fit it for a bed to be prepared in September, to be no more disturbed till the planting season; but as it is February, I should recommend to those who have not prepared their bed, to follow a plan laid down by Mr. Brown, of Marlborough, about twelve years since, and more recently commended by Dr. Horner. If the natural soil of the garden be not loamy, and of somewhat holding quality, then such soil should be obtained and placed in a ridge, adding about one-fourth of good rotten stable or cow manure, and mixing them by several turnings, and exposing to the air and frost till pulverised. Then procure for a twenty-feet bed two barrows of fresh cow-dung, and put into a tub, add soapsuds or water from a drain or ditch, and stir it a few times till reduced to the thickness of cream, or as thick as it will admit of being poured. Excavate your intended bed twelve or fifteen inches deep, put in a layer of compost, and pour over a coating of liquid manure, then another layer of compost and coat of manure, till you reach three inches off the surface; then fill up with rich loamy earth, in which the manure is more decomposed and amalgamated than is needful for the subsoil. This operation may be done in any dry weather before the middle of February. After ten days allowed for settling, the tubers may be planted in drills an inch and a half deep, and from four to five inches apart. The last fortnight in February is a good season for planting. The roots should be pressed rather firmly in the soil, and, if severe frost follows, the bed should be boarded over, or otherwise covered, for a week or two. As the tubers absorb a large amount of moisture prior to vegetating, and swell two or three times their original size, they are in this state more susceptible of injury from frost than after a month's growth.

The following are *very excellent* kinds:

INDICATOR, yellow, with brown spots.	ELIACINE, white, purple edge.
EXHIBITOR, yellow, with carmine spots.	ENCHANTER, yellow, red edge.
MRS. AYRZEE, white, and crimson edge.	MARQUIS OF HERTFORD, crimson.
SIR HENRY POTTINGER, white, purple edge.	SIR JOHN DE GRÆHME, cream, red edge.
	MRS. NEILSON, white, crimson edge.
	FESTUS, yellow, coffee edge.

JOHN WATERSTON, white, purple edge.	INTERESTOS, white, crimson edge.
DIRECTOR, yellow, red edge.	APOLLO, crimson.
CORONATION, buff, red mottled.	SABINA, yellow.
PLEASER, yellow, red edge.	NAXARA, very dark.
SALOME, sulphur, crimson edge.	PEARL, white.
PREFECT, yellow, sometimes slightly mottled.	GOMER, yellow, brown edge.
FLAMINIUS, yellow, red spot.	HAMLET, yellow, brown spot.
CALIFORNIA, yellow.	MELANGE DES BEAUTES, red, and yellow stripe.
MANIFESTO, white, purple spot.	TEMERAIRE, red, and white stripe.
PRECEPTOR, cream, rose edge.	COUNTESS OF EGLINTOUN, white.

ON HERBACEOUS ERECT-GROWING LOBELIAS.

BY MR. JOHN BURLEY, OF WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON.

THIS most charming section of *Lobelias* ranks among the foremost as bedding-plants, and highly merits a more extensive cultivation than at the present period they have. A few remarks upon them, with a description of a few choice varieties, may (I trust will) induce some of the readers hereof to give these fine plants a trial in their flower-gardens. I am confident they will, if properly managed, produce an effect that will highly please.

The plants flourish in any rich garden mould. When grown in clumps, say two or three plants together, at about eighteen inches apart, plant from plant, nothing, in my opinion, has a more charming appearance than a few such clumps in the back-ground borders of a flower-garden. They may be planted in clumps, say eight feet apart, clump from clump; the colours of the clump may vary,—say the first have white-flowered; second, a violet; third, red; fourth, blue, &c.; in this way the effect would be very pretty, and produce a splendid effect. When grown in *beds* in masses, planted not more than eighteen inches apart, plant from plant, I recommend each bed to be of one colour. They should be planted out the first week in May, and then will begin to bloom in July, and their beauty will continue through all the autumnal months; so that when the general show of flowers is over in the garden, these will still be highly ornamental and gay.

When the borders or beds require digging up at the end of autumn, the *Lobelias* must be taken up with a moderate ball of soil to each, be potted, and well watered, then be taken into the greenhouse or conservatory, where they will bloom for a long period. Thus housed and disposed of amongst other blooming plants, as *Chrysanthemums*, &c., they have a very striking appearance.

The vigorous-growing, showy, rich-coloured *Lobelias* have a pretty effect when grown in the front part of a shrub border, especially so in autumn. Those persons who prize the floral beauty of an autumnal garden, I recommend to plant in the front part of the shrubbery

borders a few of the most brilliant Lobelias, some Chrysanthemums, and Gladiolus gandensis and its fine varieties, arranging the whole so as to produce the best contrast with colours; thus grown, they produce a fine show till winter arrives.

Lobelias are easy of increase by division of the offsets, having two shoots to each part; pot them, and place them in a cool frame during winter, just preserved from frost, and by next turning-out time, with due attention to re-pot, if necessary, &c., they will be strong plants. In dry seasons the Lobelias require a *liberal* supply of water.

AZUREA.—Beautiful light blue, fine flower, dwarfish grower.

AJAX.—Fine damson colour, vigorous grower, very distinct and pretty.

VIERGE MARIE.—Beautiful white, fine spike and habit.

FAVOURITE.—Handsome violet colour, strong grower, and an extra fine flower.

AGATHOCLES.—Fine violet-crimson, large spike, and superb flower.

EPISCOPAL.—Fine light blue, and a splendid extra flower.

CÆLESTUS.—Beautiful violet-plum colour, good flower and habit.

ETOILE DU MATIN.—A fine violet colour, of excellent form, dwarfish habit.

BELLE PYRAMIDE.—A beautiful rich plum-crimson colour, large lossoms, extra fine variety.

VESUVIUS.—A violet-crimson, of beautiful form and good habit.

VICTORIA.—A rich scarlet-crimson, fine form, dwarf habit. This is the most gorgeous flower of the new varieties.

MAGNIFICENT.—A rich crimson-scarlet, flowers very large, and the plant grows five feet high, having numerous side spikes.

The above varieties are new, and quite an improvement on previous sorts.

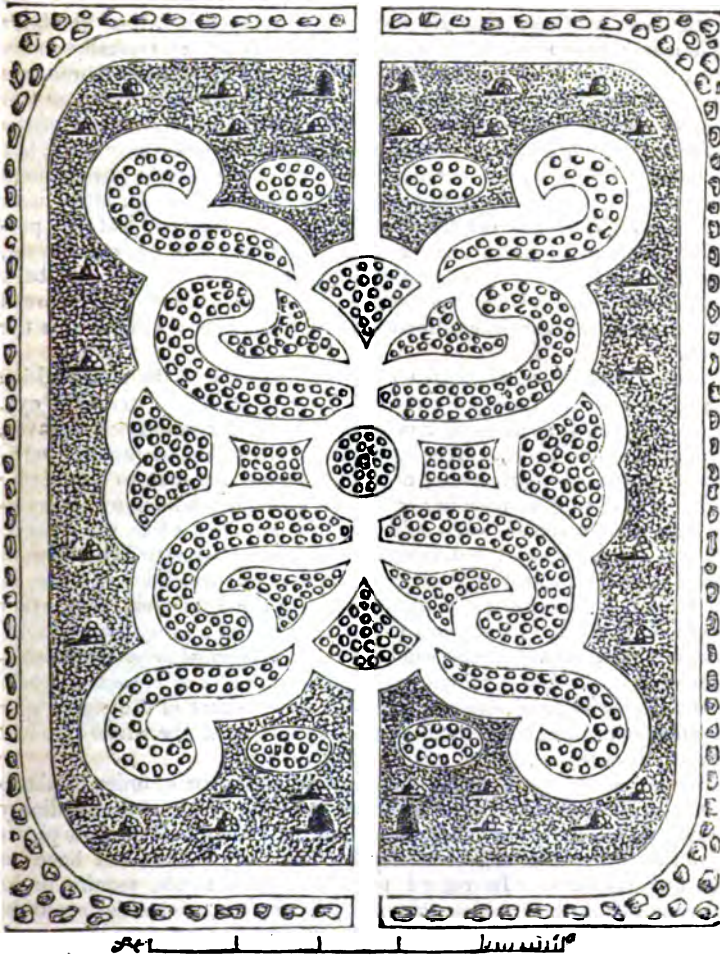
The following are older varieties, but well meriting a place in every collection :

INSIGNIS, bright scarlet. **MARMORATA**, bright light blue. **CONSTELLATION**, crimson, small but very pretty. **SIPHILITICA**, light blue. **SIPHILITICA ALBA**, pure white. **PROPINQUA**, blood-crimson. **LONGIFLORA**, violet-plum, very branching. **COMPACTA**, superb light blue, very fine. **AMÆNA**, blue and white, of dwarfish habit, and pretty.

Most of the latter varieties may be purchased at a low price, and in the ensuing spring the newer kinds will, no doubt, be offered at prices within the reach of all desirous of growing this charming section of Lobelias, and I hope many lovers of ornamental flowers will grow them, as they possess many advantages which the generality of other bedding-plants do not; viz., being quite hardy, the length of time in bloom, and the great variety in colour, as the above description contains a pure white, blue of various hues, down to a deep crimson. A circular, or oval bed, with the tallest spikes in the centre, and others gradually declining to the sides, have a fine effect. A bed should be well filled; grown wide apart the effect is, in proportion, poor.

PLANS OF FLOWER-GARDENS.—By T. RUTGER, Esq.

No. 2.



THE above design for a flower-garden, laid down on grass, is intended to be enclosed by a shrubbery, with a five-feet walk inside all round; the beds are intended to have box-edgings, excepting the four oval clumps, as seen placed on the grass. If convenient for water, the centre clump may be converted into a basin for gold and silver fish, having also a fountain. The shrubs, as indicated on the grass, should be of the most select dwarf evergreens.

A PLANT MORPHOLOGICALLY CONSIDERED.

(Continued from page 14.)

SUCH facts as these strongly incline us to the belief, that in plants with leaves that strike the eye, the leaf and plant are typically analogous. The leaf is a typical plant or branch, and every tree or branch is a typical leaf. I am quite aware of the differences between these two distinct members of the plant. In particular, we find in the case of the full tree that the branches extend all round the axis, whereas in the leaf the fibrous veins all lie in one plane. But then we have a phenomenon to connect these two in the branch, the branchlets of which often lie in one plane. The principal difference between the tree and leaf may probably be found to be in this—that the cellular tissue or parenchyma, which in the tree and its branches is collected into the pith and bark (which are connected by the medullary rays) is in the leaf so spread out as to fill up the interstices of the fibrous matter which forms the veins.

The general order, as thus stated, applies only to the plants which have pith and bark, and fully formed leaves intended to strike the eye. There is no such special order in plants with linear, unbranched leaves, such as Firs and Pines. The leaf in these plants has no ramified venation, and seems to correspond, not to the whole tree, but to the stem; and in doing so it is more in accordance with the whole morphology of the tree than a veined leaf could possibly be. But while the general order is varied to suit the different physiological structure and form of the tree, we discover here the very same general principles of order as we have been discovering elsewhere; for in the Firs and Pines every internode is of the same structure with every other; every branch tends to assume the outline of the whole tree, *every topmost or growing internode with its leafage is of the same form as the tree or branch*. Herein does the special morphology approach nearest to that of the plants with ramified veins, and the very cones are often types of the whole tree and of every branch.

We are not prepared to say what is the special law of order in plants of the monocotyledonous class. Some of these, such as our ordinary Lilies and Grasses, send off no branches; and the leaves of these plants have their veins parallel, or nearly parallel, to the stem, and have no ramified venation. In regard to Palms, they would require to be investigated in their native climes before their special order could be discovered. Some plants of this class, the Dictyogens of Lindly, to which belong the yams, have branches like our ordinary forest-trees; and it is a curious circumstance, and confirmatory of our theory, that the leaves of these plants have a reticulated structure. So far as fungi, lichens, algæ, and the whole acotyledonous plants are concerned, it is evident that they present a repetition of parts homotypal in structure and form, and thus illustrate one general doctrine—that throughout the vegetable kingdom the parts are similar to one another, and in nice accordance with the whole.

Such facts as the above incline us to the belief that the fibrous veins

of the leaf bear a morphological analogy to the stems of the tree. We are inclined to regard the root, the stem, and the leaf as the three distinct members of the fully-developed plant; these three parts, however, being morphologically allied, so that, to adopt the phraseology of Professor Owen, as applied to another subject, they may be called *HOMOTYPES*. The plant thus becomes an unity with innumerable interesting diversities.

I think it proper to add, that while strongly convinced that there is truth in this doctrine, I am at the same time prepared to believe that it may have to submit to modification, which may correct, but will not destroy, the general view.

REMARKS ON THE MYRTLE.

BY MR. P. MACKENZIE, OF WEST PLEAN, NORTH BRITAIN.

FABLE informs us that the Greeks named this shrub or tree from *Myrsine*, an Athenian damsel, and favourite of *Minerva*, who was metamorphosed into a *Myrtle*. *Pœna*, however, says it was named *Myrtle* from the fragrance of the foliage and berries so nearly resembling the celebrated odour of *Myrrha*, or *Myrrh*; others deduce it from *Myron*, perfume.

This beautiful shrub or tree attracts universal attention by its irresistible charms, and has been made the emblem of Love, and dedicated to Beauty. When *Venus* first sprang from the sea, and appeared on the bosom of the waves, the Hours preceded her with a scarf of a thousand colours, and a garland of *Myrtle*.

The *Myrtle* has been made sacred to *Veritas* (Truth) as well as to *Venus* (Beauty).

"Unfading branch of verdant hue,
In modest sweetness drest,
Shake off thy pearly tears of dew,
And decorate my breast.

"Dear emblem of the feeling mind,
Truth's consecrated tree;
Still shall thy trembling blossoms find
A faithful friend in me."

MARY ROBINSON.

Although the common *Myrtle* has been grown in this country for more than two hundred and fifty years, it is still a tender plant in most places of our island, and even in the latitude of London it will endure the climate only in its warmest and most sheltered spots.

Although the *Myrtle* has been cultivated by our fathers, grandfathers, and great-grandfathers, it is still a favourite with a vast number of their progeny.

Like many of the old cultivated plants, the common *Myrtle* has produced several varieties, such as the Roman, Tarentine, Italian,

36 SEASON FOR PLANTING ORNAMENTAL TREES AND SHRUBS.

Portuguese, Broad-leaved, Narrow-leaved, Pointed-leaved, Variegated-leaved, and Double-flowered.

This charming evergreen fragrant bush, we are informed, inhabits all the warmer parts of the basin of the Mediterranean and Western Asia. It is regarded by the Persian peasant with superstitious reverence; and in our own country, I hesitate not to assert, "it is universally admired and esteemed." Any short notice, therefore, as many of the readers of this Magazine, and the peasantry of this country, may possess a Myrtle in their *gardens* all the year round, may not be unworthy of a place in its pages.

For some years I have been trying experiments as to where the Myrtle will best stand our winters, in rich soil and poor soil, and placing them in various points of the compass, in sheltered situations and in exposed places. Some of them are killed the first winter they are exposed; others will push shoots from the root in the following spring; but the one that has stood best as an evergreen is growing in poor soil on the north side of a Tree of Life (*Arbor Vitæ*), which prevents the full blaze of the sun from shining upon the Myrtle for a great part of winter; and when the frost finds it, it appears to do the plant less injury than those receive where the sun shines upon them. The *thawing in the shade* I consider to be of importance in saving the lives of these, as well as many other tender plants that have been tried in the open air.

As the common Myrtle is easily propagated, or good-sized plants may be purchased at a small cost, other persons may try the experiment; and although some plants may perish, it will not be a costly loss. It is well worth trying, as those which become wholly inured to the climate, become most lovely evergreen shrubs.

In the fourth volume of the "Cabinet" there is a very interesting article on "the Myrtle;" and without being considered a robber, I think I may safely quote here the last paragraph of it:—"At Sir Nicholas Carew's, at Bedington, there is a *Myrtle*, of the Spanish broad-leaved kind, which is above eighteen feet high, and spreads about forty-five feet wide." Mr. Bradley says, "If to this are joined those Myrtles that he has seen growing in Devonshire in the natural open ground, he cannot see any occasion for any great use of fire for those sorts of plants which are common in greenhouses;" but plants that are "kept in pots" are much more liable to suffer by the frost than if they were grown in the naked ground; and the *more woody* the plants are, the more hardy in proportion.

THE BEST SEASON FOR PLANTING ORNAMENTAL TREES AND SHRUBS.

BY MR. H. STILWELL, OF PINE-APPLE-PLACE NURSERY, LONDON.

WITH regard to the most suitable time for planting ornamental trees, shrubs, and roses, about which so much has been written, and to which so much importance is attached, nothing definite which will suit every

place and casual circumstance can be given. General success, however, depends on "the time" of the year, the state of the weather, and the condition of the plants and trees. Something will always remain to be decided by the judgment of the gardener or planter.

As a general rule, I have always proved the month of March to be the most "unseasonable" in the whole year, for either removing or planting any kind of trees or shrubs. March is generally "a very cold month, with cutting winds from the east;" the soil, too, is in its "coldest condition," and, in proportion, is unsuited for promoting an immediate striking of small roots into it. These adverse circumstances prevailing, render this period the worst to which newly planted trees, shrubs, and roses, can be subjected to.

If the nursery stock of trees and shrubs were moved and replanted every alternate year, in order to promote the production of numerous fibrous roots, there would not be half the losses in removing and planting as there now are, even if the operations are done at an unseasonable time of the year.

Respecting the removing and planting of *evergreen* trees and shrubs, some writers on the subject affirm strongly that August is a very suitable month for those operations; I differ from such opinions. From experience, I have always found the following period to be suited for any kind of trees or shrubs whatever; viz., from the first of September to the end of February; but the most favourable part of it is, from the "middle of September to the middle of November." With many persons, the *time* of removing and planting is not the governing consideration; but orders are issued, and subordinates must of course obey, even if it is in July or August; such instances are not unusual, and the impropriety of such a course of procedure is discovered when attention is called to the dying and dead plants, and the blame is then usually thrown upon the individual operator.

Whenever the leaves of "newly planted evergreens" dry up and remain upon the plant, its early death is certain to ensue. But if the leaves even "fall off" soon after planting, and the bark keeps plump and green inside, the plant will grow. If, however, the weather is dry, the branches being sprinkled over occasionally with water in the evening, will promote an earlier pushing of shoots. I find this sprinkling overhead of all late spring planted trees and shrubs is *essential* to their succeeding, and ought to be done on every dry evening till roots push into the soil.

NEW DAHLIAS SHOWN IN 1852, AND INTENDED TO BE OFFERED TO THE PUBLIC IN THE SPRING OF 1853.

Notes carefully made from the flowers when in their best condition, and may be fully relied upon as to merit.

ABIGAIL, blush, mottled with purple; centre well up, outline not good.

ALEXANDER POPE, cream-coloured, mottled, and edged with rosy-pink ; centre well up, outline good.

AMAZON, white, with a very broad margin of carmine-lake ; medium size, much in the way of Beauty of Sussex, but better form.

ANNIE NEVILLE, flesh-colour, tipped and mottled with rosy-purple ; centre well up, outline good ; the rows of petals too wide apart.

ANNA BOLEYN, blush-white, edged with lavender ; outline good, centre well up.

BEAUTY OF THE GROVE, yellowish-buff, edged with rosy-pink ; good outline and centre ; pretty.

BOB, deep orange-scarlet, large ; outline good, centre well up.

BRILLIANT, vivid scarlet, large ; centre well up, and if grown in fresh soil, not much enriched, it will be a first-rate flower in every respect.

BRITISH QUEEN, white, edged with rosy-lilac ; outline good, centre well up.

CAMBRIAN BEAUTY, dull orange, tipped with bronze-purple ; centre and outline good ; smallish size.

CAREW, bright-red ; centre good ; wide between rows of petals, but in poorer soil would come more compact.

CLAUDIA, purple, with white tip, very showy ; centre up, but too open between petals.

DARLINGTON, light purple ; good outline, but centre too low.

DUCHESS OF KENT, yellow, with white tip ; good outline, but not equal to Mrs. Hansard.

DUCHESS OF SUTHERLAND, lower part and tip of each petal white, and midway of a rosy-red colour ; very showy.

GOLDEN EAGLE, orange-yellow ; good outline, centre a little too low, flower very deep.

GRAND DUKE, violet-purple, large, deep, and must be grown in poorish soil to prevent it being coarse ; it will then come excellent.

HARLEQUIN, rose and purple, with white tip ; pretty.

HORNCHURCH BEAUTY, rosy-lilac, large ; good outline, centre a little too low.

KING OF THE FANCIES, light purple and pink, occasionally comes purple only ; good centre ; showy.

KATE, blush, with small purple tip ; outline good, centre well up.

LILAC KING, very pretty lilac ; large, and of excellent form.

LADY DALRYMPLE, blush, with purple tip ; medium size.

LADY FOLKSTONE, blush ; medium size.

LORD BYRON, salmon-colour ; outline and centre good ; medium size.

LORD NELSON, salmon-buff ; outline and centre good ; must not have a *rich* soil ; it will then come excellent.

MISS ELLIOTT, bright primrose, edged with pink ; very pretty and of good form.

MRS. WENTWORTH, white, edged with rose ; good outline, well up, fine form.

MADAME KOSSUTH, white and pink ; pretty, but a little too open between petals.

MAGNA CHARTA, orange-red ; good outline, well up ; large.

- MRS. F. SUTTON, deep pink ; well up, good outline.
 MRS. JAMES, salmony-buff, with white tips ; good outline, well up.
 MRS. STEIN, light crimson, with deeper coloured shades ; good outline, centre good, but flattish flower.
 MULTIFLORA, salmon, purple, and white ; well up, but imperfect outline.
 MISS CAROLINE, white, with a delicate lavender edge or tip ; good centre ; pretty.
 MISS F. MORIERS, deep yellow, crimson at the sides, and white tip ; pretty.
 MOTLEY, white, striped with lilac and purple ; form not good, but showy.
 OLIVER GOLDSMITH, orange-red ; rough.
 PANORAMA, rose, with white tips, and the centre lighter colour ; well up and good outline.
 PLANTAGENET, purple, shaded with rosy-lilac ; well up, and good outline.
 PRINCE OF ORANGE, bright orange ; centre good, flat face.
 QUEEN VICTORIA, deep yellow, edged with red ; well up, and good outline.
 RIVAL DUKE, orange-red ; large and showy.
 SIR JOHN FRANKLIN, salmon-buff ; well up and good outline.
 UNANIMITY, nearly equally striped with red and yellow ; large, and in form much like the Duke of Wellington.
 VESUVIUS, salmon-red ; large, but rather rough ; well up, outline good.
 WONDERFUL, pale yellow, striped with rosy-red ; well up, outline good.
 ZEBRA, light, with brown stripes ; well up and good outline.
 The above are what came under our notice, and notes of which were taken.

MISCELLANEOUS SECTION.

TRANSPLANTING TREES.--We had an opportunity of witnessing the exhibition of a new apparatus for the lifting and removal of trees, invented by Mr. Stewart M'Glashen, sculptor, in this city. The exhibition took place on the grounds of Mr. Craigie Halkett Craigie Inglis, of Cramond, in a park adjoining Cramond-house. The principal improvements effected by the invention are, that the root is not exposed by the removal of the mould from it, thus preventing risk to the vitality of the tree ; that no trench requires to be dug round it ; that the work can be accomplished with ease and expedition, and at infinitely less expense, and that trees of much greater magnitude can be removed than has hitherto been supposed.

The tree experimented upon was a slender sycamore tree, of 53 feet in height, and 5 feet 4 inches in circumference at the thickest part of

the stem. The soil was very damp, from the heavy rain of the previous night.

The first process of Mr. M'Glashen is to lay down a frame of T-iron—in this case 10 feet square. He then takes cutters made of malleable iron, 1 foot broad, and 3 feet deep, or, with the head and neck, 4½ feet. These cutters are driven by a wooden mallet into the soil to the depth of 3 feet all round, and, being inserted sloping inwards, they give to the enclosed mass the form of a square-blunted wedge. A rod of iron is then laid along the top of the four rows of cutters, and extension-rods going across the frame force the heads of the cutters apart as far as possible, and, consequently, cause the points to converge at the bottom. A clasp or gland is then put around the trunk of the tree, with a mat under it to preserve the bark. Two parallel beams are then laid across the frame and fastened to it with chains. The above constitutes the frame to be raised. The means of raising the mass is a carriage (which also serves the purpose of transportation), consisting of two strong common carts, one at either end, with bolsters raised above the axletree of both, and on which bolsters rest two massive parallel beams secured to them with strong bolts. The height of the beams from the ground is about 6 feet. They, of course, enclose the tree. The process of lifting is exceedingly simple, the whole being accomplished by screw power. The screws are four in number, and so arranged as to make the lift equal. They are made fast to the beams of the frame, and are worked by men standing on planks across the beams of the carriage. The frame and enclosed mass are slowly raised, and the tree with gentle oscillation moves erectly upwards. The tree may, it is evident, be raised without the use of guy ropes, the solid mass of earth effectually balancing the trunk and branches; but they were used on this occasion as an extra precaution. After about twenty minutes' working of the screws, the tree was completely raised from the pit, the operation having been effected in an easy and gradual manner, and amidst tributes of admiration from all around. It was not the intention to remove the tree experimented upon; but the means of removal being exhibited and explained, all seemed satisfied with the feasibility of the apparatus for the purpose. A strong case was shown for the enclosure of the ball of earth, when the tree is to be conveyed to any distance. In moving, the tree still maintains its erect position. The propelling power, when horses cannot be used, is by a winch in front of the foremost cart, and block and tackle; but when the way is clear and the road good, horses will do the work safely and more expeditiously. The tree is lowered into the pit prepared for it on the same principle.

It is calculated that, in this instance, the weight lifted was 13 or 14 tons; but the inventor and patentee states that, by an enlargement of the apparatus, he could lift almost any tree.

The principal experiment being accomplished, the company were directed to another part of the policies of Cramond-house, where a holly-tree, about 15 feet high, was lifted by four large and broad spades, forming a case to enclose the root. A similar experiment by smaller implements was made on a Gooseberry-bush, while some smaller plants

were expertly lifted out by two semi-cylindrical spades. In each case the plant was extracted with its native ball of earth. An oblong apparatus has also been invented by Mr. M'Glashen for the removal of hedges; and by a similar contrivance he lifts out the mass of earth for insertion of tile-drains, replacing it when the work is accomplished. The implements used in these operations are also patented.

CYCLAMENS.—The period when you procure the Dutch bulbs is the proper time to obtain these very pretty winter-blooming plants. Good healthy plants procured then will probably have commenced growth, and should be kept rather close for a week, when it will be advisable to examine the state of the roots, and, if well furnished, shift into pots a size larger; otherwise repair the drainage, and defer shifting until the roots indicate a want of pot room; and then a moderate shift only should be given. At this season the plants should be placed near the glass, and should receive a sufficient supply of water to keep the soil in a nice moist, healthy condition. Provided frost is excluded, the temperature in which they are grown is of little consequence, except where plants are wanted in flower, without loss of time; and as the blossoms appear before the foliage is well developed, there will be little difficulty in securing these at any period from November to April. Keeping the plants cool and rather dry will retard their blossoms until March, and placing them in a temperature of from 45° to 50° will bring them into full beauty in a very short time. The plants may be kept in a cold pit, where they will be safe from the frost, until they commence flowering, and then they should be removed to a sitting-room window, where, with care to protect them from currents of cold air, they will be quite at home, and will be beautiful objects for some two months. The best situation, however, for Cyclamens, while growing and in flower, is near the glass in a greenhouse or pit, where the temperature may average from 40° to 50°, and where air can be admitted without its passing over the plants, as is the case in most sitting-room windows.

It is a too common practice to treat Cyclamens with neglect directly the beauty of the flowers is over, and to give them little attention, and sometimes hardly a drop of water until the following autumn, when they are wanted in flower. This is the very reverse of what they require, and annually occasions the loss of many bulbs. The plants should be allowed a light, airy situation in the greenhouse or pit, and kept properly supplied with water until May, when they may be removed to a shady situation out of doors; and when the leaves decay, very little water need be given until it is desired to excite the plants into growth; the soil, however, should never be allowed to become quite dry. My own practice is to plunge the pots in coal-ashes during the summer, which, in case of long-continued droughts, are watered, so as to afford a little moisture to the soil in the pots. The plants should be moved to the greenhouse in September, and surface-dressed or potted as may be necessary.—*Gardeners' Chronicle*.

ON THE CULTURE OF THE SINGLE ANEMONE.—Is is some years since I was first induced to grow these charming flowers, from seeing the splendid masses of colour produced in a friend's garden. I commenced by obtaining a dozen heads of seed, when they began to open

at the top, or lay loosely on the top of the stalk. I did not save this seed till spring. Had I done so, I should have lost a season; but my beds, which are naturally of a sandy nature, on a rocky subsoil, having been previously dug, and had some very rotten manure buried in them, six inches in depth, immediately after raking them smoothly, the seed was scattered over the surface in less than three hours after being gathered. I then beat the surface with the back of a spade, and covered, to the depth of the eighth of an inch, with rich light compost. The young plants speedily made their appearance, and gathered considerable strength before the winter came on. Being perfectly hardy, they needed no protection.

The display that these young seedling plants make in the spring is perfectly amazing, flowering from roots of the smaller size; for when taken up, I have had thousands not larger than an early Warwick pea.

My plan is, when they are in bloom, to eradicate all which are of dingy and obscure colour; and I have been most abundantly rewarded, by having as beautiful an assortment of this flower as any one can boast of. I may just observe here, that I have on several occasions had double flowers among the seedlings. These I have carefully selected, and am now growing them as named sorts.—*Midland Florist*.

HOW TO PLANT ROSES.—It may not be considered out of place here to offer a few brief remarks on the best system of planting Roses. When they are to be placed out singly, on lawns or in beds, amongst other plants, a hole should be made about eighteen inches deep, and large enough to contain a good-sized wheelbarrowful of compost; two-thirds of this should be turfy loam (if it can be procured from an old pasture it is preferable), and one-third well-decomposed animal manure. These should be thoroughly mixed together. Should the ground be dry at the time of planting, or if it is done in spring, a liberal watering should be given before the soil is all filled in around the plants, and standards should be securely staked to prevent the winds from moving them, which is very injurious. When beds are to be planted, the ground should be deeply trenched, and afterwards a good dressing of manure should be applied. A small quantity of the compost recommended above may also be added around each plant. As roses seldom thrive well in soils that have previously grown them for a number of years, it is advisable that when old beds are renewed, the soil should be removed to the depth of eighteen inches, and its place supplied with the above mixture. When a piece of ground is set apart for the exclusive cultivation of roses, the most open situation that is available should be selected. If wet, it should be drained. If it is inconvenient to use tiles, a layer of from four to six inches deep of brickbats; or any other coarse material, will answer the purpose. This done, the ground should be trenched as deeply as the nature of the soil will admit of. The beds may then be formed according to taste or circumstances, and the planting may be proceeded with as recommended above. November is the best month for transplanting, but it may be safely done from October to March. It is not advisable to prune at the time of, nor immediately after, planting. The first season the plants should all be headed back

to two or three buds upon each shoot. This will ensure a vigorous growth.—*Wood and Son, Maresfield.*

PERPETUAL BLOOMING TREE CARNATIONS.—I was pleased with Mr. Burley's remarks on this valuable blooming class of flowers, which appeared in a recent Number. In July, 1851, I purchased half a dozen varieties; each plant had several side-shoots: these I shortened, and, in a gentle hotbed, struck them. When rooted, I potted them in a rich loam, and kept them in a cool frame. Early in October, I cut off their leading shoots, and struck them, which I also potted, and kept in a cool frame, with the exception of seven, not having room for them; these I then (October) planted in the open ground, as well as a couple of the first-struck plants; they had not any protection in winter, only secured by a few slender sticks, to prevent their being blown about. In April, I had these taken up and replanted, and trained to a neat wire edging round a circular bed; and from July to the present time (December 10th) they have been in profuse bloom. I had a few planted in the mixed flower-borders trained to neat tube-shaped wire frames, six inches across, two plants to each, and they have also been in beautiful bloom throughout the season. About half the plants I kept for growing in pots I have had in bloom, either outdoors or in the greenhouse, during all the time from last December to the present December, 1852, and now have some plants in bloom, and others with a profusion of buds likely to bloom throughout winter. The other half of the plants in pots I turned out in June, took away the crocks from the ball, replaced them by putting in a portion of soil equal to their bulk, and plunged the pots overhead in a border, close to a brick wall, four feet high, and trained the plants to it. They have bloomed charmingly all the season, and now having taken them into a greenhouse, I have the plants in fine bloom; and though they had rooted through the bottom hole of the pot, their removal has not injured them, but their appearance, now in-doors, has much improved them. This fine class of clove-scented perpetual-flowering Carnations appear to succeed well, either in the open air, greenhouse, sitting-room, stove, frame, or pit. They are worth the attention of all lovers of flowers.

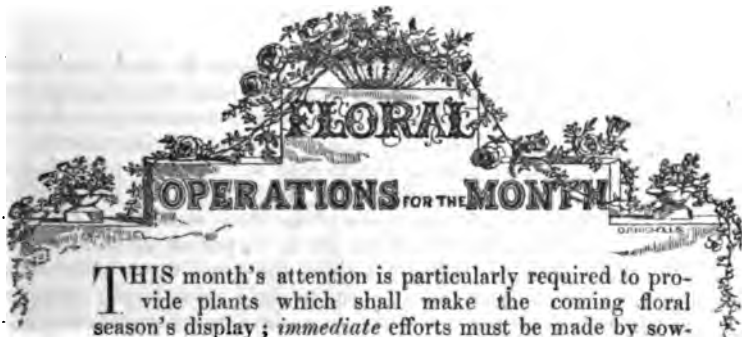
—*An Amateur.*

FLOWERS IN COVENT-GARDEN, IN JANUARY.—Lily of the Valley, Hyacinths, Narcissus, Jonquils, Epiphyllum truncatus rosea, and violacea; *Bignonia venusta*, *Cinerarias*, Tree Carnations, Violets, *Acacias*, scarlet and other *Geraniums*, *Camellias*, *Poinsettia pulcherrima*, *Erica caffra*, *gracilis*, *Linnaeoides*, *Wilmoreaana*, *Cerenthoidea*, *Chrysanthemums*, *Salvia fulgens*, azurea, *gesneriflora*; *Lobelias*, *Tropaeolum Lobbianum*, *Daphne indica rubra*, *Azalea indica*, *Sericographia Ghiesbrihtiana*, *Justicia speciosa*; *Roses*, several species of *Orchidææ*; *Cyclamens*, *Sephanotus floribundus*, *Mignonette*, *Heliotropes*, Chinese *Primroses*, *Fuchsia serratifolia*, and others; *Lilies*, Cape Jasmine, *Epacris* of sorts; *Tulips*; *Ardisias*, with clusters of red, "holly-like" berries; *Passiflora kermesina*, *Polyanthus*, *Pinks*, Single *Anemones*, *Cypripediums*, *Euphorbia jacquiniiflora*, *Plumbago rosea*, *Cestrum aurantiacum*, Orange flowers, scarlet *Rhododendrons*, and *Passifloris racemosa*. The above flowers can be had to ornament the greenhouse, sitting-room, &c., during winter.



CUPRESSUS FUNEBRIS (*Funeral Cypress, or Weeping Cypress*).

SIR GEORGE STAUNTON accompanied Lord Macartney in his embassy to China, and was the first English writer who made mention of this very "*noble evergreen tree*." Subsequently, however, Mr. Fortune met with it near the celebrated tea-country of Whey-Chow, and sent plants and seeds to Messrs. Standish and Noble. He observes, "The most beautiful tree in this district is a '*Weeping Cypress*,' which is generally found planted in cemeteries. It forms a noble-looking evergreen tree, about sixty feet high, having pendulous branches, like the weeping willow. It grows very symmetrical, and reminded me of some of those large and gorgeous '*chandeliers*' which one sees in large and public halls in Europe." It is quite hardy, and will be a charming ornament for park scenery, for *lawns*, for the entrance to suburban residences, cemeteries, &c. It will form an admirable contrast and companion with the Deodar Cedar, and *Cryptomeria japonica*. It ought to be grown wherever it can be admitted. It can have the lead stopped at any desired height, and thus be regulated to suit very limited circumstances for many years.



THIS month's attention is particularly required to provide plants which shall make the coming floral season's display; *immediate* efforts must be made by sowing seeds, striking cuttings, dividing plants, &c.

IN THE FLOWER-GARDEN.

Rose-trees must be planted directly. Prune the open-air kinds of the *hardy class* now, and the tenderer sorts next month. Perennial and biennial plants in the flower-bed may be divided. Plant out Hollyhocks and any of the biennial plants. Pink-beds: see that the plants remain secure. Carnations and Picotees: if mildew attack the leaves sprinkle with sulphur. Manures should be laid over the roots of Roses, removing a few inches of the earth, filling up the hollow with well-rotted cow or hot-bed dung, and sprinkle it over with soil, so that it may not dry.

About the middle of the month, if the weather be dry, plant Ranunculuses and Anemones five inches apart, an inch and a half deep from the crown to the surface; and if the soil be dry, after planting, press the surface with a flat board. Be careful that Tulips be *firmly* secured in their positions, so that they be not damaged by wind. A small protection against strong wind should be provided on the bed side most exposed. Heartsease should have a similar protection. Now is the time to make a plan of the flower-garden, parterre, &c., and to mark each bed with the kind of flowers required, and then to prepare a stock to furnish accordingly, whether from the sowing of seed or otherwise, as with Verbenas, &c. Protect the early buds of Tree Peony, &c. Sow some of the hardy annual seeds in borders for early bloom in dry situations.

IN THE FORCING STOVE OR FRAME.

Sow seeds of the tender annuals, as Balsam, Amaranthus, Cockscomb, &c., in pots, and the half-hardy kinds, as Asters, Stocks, &c., either in pots or upon a bed of soil, &c.

Cuttings of Fuchsias, Alonsoas, Ragwort, Calceolarias, Cupheas, Salvias, Heliotropes, Geraniums, Lotus, Bouvardias, Anagallis, Verbenas, Petunias, and such like plants, for the open beds in summer should immediately be struck, or the plants will be too weak to answer the purpose. If cuttings were put off in autumn, they should now be potted off singly into small pots, any long ones amongst them should be stopped, to induce laterals and make bushy plants.

Dahlia roots should be immediately put to force for stock, and seed be sown in pots. Lobelias be potted singly, to have them vigorous by turning-out time. Boxes and pots of Mignonette for succession should be sown. Achimenes, Gesnerias, Gloxinias, &c., be introduced, to promote their immediate growth, and as soon as they have pushed, pot them, singly. Amaryllis, &c., be excited in like manner. Pot *Tigridia pavonia* and *T. conchiflora* into small pots. Sow seed of the Chinese Primrose, and as soon as the plants are fit to pot off do so in a rich compost; keep them in heat for a short time, and never water them over head. Calceolarias be encouraged, to have them large; they, as well as Cinerarias, succeed best when grown in a warm, moist, airy pit-frame, kept at about 56° of temperature. Fuchsias required for exhibition should now be cut in, so as to have them a good shape, and after having pushed a little, be re-potted, thinning away all unnecessary shoots.

IN THE GREENHOUSE, &c.

Pelargoniums, to be superb specimens, should be re-potted into their blooming pots (read the several Articles on their culture in previous volumes); they must have a free circulation of air around the plants; it gives vigour to the shoots and prepares them for a higher temperature afterwards without injury, and a stronger bloom is produced. The one-year old plants headed down last autumn will have produced young shoots now, a few inches long; thin them. In order to have a succession of bloom, now stop the shoots; this will induce the production of lateral ones, which will come into bloom after the first race of plants have ceased, and continue to a late period of the season. A few more plants, stopped a month later, will supply to the end of the year. (See vol. xvi., p. 199.) The surface soil in all pots should be stirred up; it tends to health. Epacris, Correas, Coronillas, Acacias, Cinerarias, and other plants, will now be coming into bloom; water seldom as possible, but when given let there be as much as will moisten *all* the soil. Ericas will still be inactive; give but little water. If any mildew appear, dust with sulphur. Camellias, too, should occupy an airy part, and the greatest care should be taken to keep the soil in an *equally moistened* state, using water of a temperature equal to that of the house. Give weak manure-water alternate with the other. Alstroemerias, *Lilium speciosum*, and others, should be re-potted.

IN THE STOVE.

Exotic seeds should now be sown.—(See Articles in former volumes). Specimen plants for exhibitions will require re-potting, pruning, &c. *Ixoras* should be elevated, so as to be near the glass, in order to set their bloom; they must have plenty of air at all times convenient.

BRIEF REMARKS.

A ROYAL BOTANIST.—There is one king in Europe who is a good practical botanist, and who must look back upon the hours spent in the arrangement of his fine herbarium with far more pleasure than upon those wasted in a vain and retrograde course of politics. The monarch in question is his Majesty of Saxony, who, in his scientific career at least, has gained honour and respect. Many are the stories told by his subjects of their ruler's adventures when following his favourite and harmless hobby; how, more than once, astray from his yawning courtiers, he had wandered in search of some vegetable rarity across the frontier of his legitimate dominions, and, on attempting to return, was locked up by his own guards as a spy or a smuggler, since he could produce no passport nor give any more proper account of himself than the preposterous assertion that he was their king. Fifteen years ago, he made a famous excursion to the stony and piratical little Republic of Montenegro. It was literally a voyage of botanical discovery, and the potentate sailed down the Adriatic in a steamer fitted out with all the appliances of scientific investigation. On its deck he might be seen busily engaged in laying out his plants, ably and zealously assisted by his equerries and aides-de-camp, and guided by the advice of eminent botanists, who accompanied him as members of his suite. Such a kingly progress had surely never been seen before; unless Alexander the Great may have relieved the monotony of conquering by making occasional natural history excursions with his *quondam* tutor Aristotle. The Montenegro, on ordinary occasions very troublesome and by no means trustworthy people—folks who still keep many of the worst habits of the old Scottish Highlanders—were mystified into tranquillity by the peculiar proceedings of their royal visitor and his noble attendants. Resolved, however, to render due honour to so distinguished and unusual a guest, they furnished a guard of state to accompany him in all his peregrinations; and, whenever his botanical Majesty stooped to gather a new or rare specimen, the soldiers halted, and, with much ceremony, presented arms.—*Westminster Review*.

ON VARIEGATED LEAVES.—I am a subscriber to your very useful and clever Magazine, and being a great admirer of variegated plants, have found the December Number particularly interesting. I think, however, there is one great omission, "the tendency of variegated plants (the leaves) to become self;" and I do not think the allusion in page 298, by the professor at Bonn, is at all conclusive.

I have cultivated as a creeper showy flower, and ornamental plant for bordering, &c., all the year round, "the variegated *Arabis*;" it has a disposition to become partially self, but this year whole plants grown in totally different soils and situations have become plain green; viz., in a damp shady border participating in the kitchen garden manure; the other limestone rock under a south aspect wall, the top soil being peaty and light.

I have a variegated Alder which has a very curious appearance in flower. My gardener is trying to raise a variegated *Cistus* from a branch on a plant of the usual foliage; but he has not hitherto succeeded in striking it, which seems like weakness, as those having the usual green foliage readily strike root; the leaves are curiously variegated. I have also a variegated Veronica, Phlox, and two Balms, all very pretty of their kinds. The Phlox does not thrive here, but is very fine further north, of medium height, having a white flower; it is a beautiful plant.—(*A devoted Floriculturist in the County of Durham*.)

THE CHINESE (OR INDIAN) AZALEAS.—By the following method of treatment I have for many years found these very showy blooming plants to succeed most admirably.

When the plants have nearly finished blooming, and before the shoots push afresh, I re-pot them, on a compost of old turfy loam, well broken, good peat, rotten leaf mould, and silver sand, in equal parts, well mixed. I have a liberal drainage, and a sprinkling of small bits of stone, brick, or charcoal intermixed with the whole. In this they flourish vigorously. After potting, I place them in a medium-heated forcing pot, heated by hot-water pipe, and troughs over the pipes in which water is kept, so that the plants have a nice moist warmth—this is essential to their forming good new wood. When it is perceived the ends of the shoots begin to harden, turning rather brown, the flower buds will then be first forming, the end bud becoming plump and hard. This being obtained, I remove the plants outdoors (usually this occurs from the middle of June to the middle of July), and place in a somewhat shaded place from mid-day sun; here they stay till the last week of September, when they are removed to a cool greenhouse pit, and taken in successively to the forcing-house; the earliest prepared ones for blooming are taken the first.

A LONDON NURSERY FOREMAN.

BANISHING MICE.—If in places infested with mice their holes be plentifully dusted with snuff, they will be off like shot.

TO PROTECT TREES, SHRUBS, &c.—Collect a sufficiency of fresh cow-dung from the pasture, and add a sufficient quantity of soot, until it resembles mortar in consistency. Let it remain unused for a week, but do not add water to it. Then apply it with the hand, or a mason's trowel, to the stems of the trees. It is a repellant to hares, rabbits, horses, &c., and will last two years.

RUSSIAN SUPERB VIOLET.—This very fragrant violet is quite hardy, and does not require the protection of glass, or in any other way whatever; in fact, it would be injured thereby. It blooms profusely from September to March in the most open situations, which, indeed, are selected as preferable for it, and the scent of it is superior to that of any other violet I am acquainted with.—R. SHACKELL.

PAINT-DRYERS.—Coal-tar will dry by using the dryers usually applied to paint, viz., acetate of lead, sixpence per lb., and turpentine; about half a pound of lead, or upwards, to two gallons. Use as much lime in powder with the tar as possible, well boiled. Stockholm tar, if laid on after boiling to a certain consistency (namely, when some of it, dropped from a piece of tow, appears clotty and stringy), will dry in two hours; but if this *tide* be not "taken at the full," it will never dry.—(W. P. H. *Gardeners' Chronicle*.)

DOUBLE DAISIES.—I have grown our old kinds of double-flowered daisies for many years, but have never noticed any of them produce "seedlings." If, however, they have done so, I have not seen any flower different from the original ones. Now, we have lately had beautiful double varieties from the Continent; how am I to proceed to succeed in a similar manner? I shall be glad of early information by some reader hereof.—G. G., Horta.

The "double daisies" belong to the same natural order as the "dahlia," and produce numerous seeds. Have some of your best double varieties grown at a distance from any single-flowered ones; let the floral heads be taken as soon as they have bloomed, and are, as you judge, become duly withered, and the seeds somewhat matured; you will be able to obtain ripe seed from the "early spring bloomers," by July. Sow it immediately, have it shaded from the sun, and when the plants are strong enough, pot them singly, or plant them into the open ground; you will raise double flowers too.

PLANTING RANUNCULUSES.—The middle of February is universally agreed to be the best time for planting in this country. I have succeeded in blooming them much finer, every year, than any I ever saw elsewhere, and the following method of planting, &c., is what I have practised.

I have grown my collection in the same situation during twelve years. The bed was first made two feet deep, and the substratum is shaley rock. Early in September I have the top foot of soil thrown aside, and the bottom one wheeled entirely away, after which the soil of the top, previously thrown out, is turned in to form the bottom portion; over it I spread about five inches thick of well rotted dung, and have it well dug in. This being completed, I have the top foot of the bed filled up with "one-year old turfy-loam," well broken, about four inches of the surface soil sifted finer, to plant the tubers in. In planting I have them five inches apart in drills; after placing them firmly I carefully cover them, and when the soil is pressed gently with a board over the whole, the crown of each tuber is covered "one inch and a half." If frost occur, I cover the bed with a thick canvass (or a mat will do) during night. When the tops begin to push through the soil, I carefully assist them pushing without injuring the leaves. When fully up, I have the surface of the bed stirred over, and this is often repeated afterwards. When the tops are pushed above the soil, I am careful to have the soil pressed closely and firmly around the stalks to keep them steady and from being injured by being too dry. When the season is very dry, I water between the rows on an evening, and use soft pond water. At each watering I give as much as will sink deep, so that such an application supplies moisture for a week or ten days, as the season may be. I shade the bed every mid-day the sun is powerful, for two or three hours. When the bloom is over, and as the leaves of any plant turn yellow, I immediately take such up, not waiting for a general take up, as is often done, to the injury of the early bloomers.—AN ARDENT ADMIRER AND CULTIVATOR. Middlesex.

DESTROYING SLUGS.—Strew over a bed of seedling, and other plants, or around a single plant, a coat of barley awns (or what is by some termed chaff). I have often tried this with perfect success. The slugs get entangled, as it cleaves to them, and they soon perish.—SENEX.



Rhododendron lanatum



"When Spring begins the dewy scene,
How sweet to walk the velvet green,
And hear the zephyr's languid sighs,
As o'er the scented mead he flies."—MOORE.

RHODODENDRON LANATUM. THE WOOLLY STEMMED ROSE-TREE.

"O'er pine-clad hills and dusky plains,
In silent state "Rhodonia" reigns,
And spreads, in beauty's softest bloom,
Her purple glories through the gloom."—SHAW.

THE Greeks named this noble flowering plant "Rhododendron," from *rodon*, a rose, and *dendron*, a tree. It was also called in that language "Rhododaphne," the rose-laurel. Pliny observes, that "this plant was not so happy as to have a name given it by the Latins;" and it is remarkable that it retains to this day the original name throughout Europe. The oldest record of the original birth place of the first known Rhododendron is said to have been in the southern subalpine tracts of "Caucasus," where it still abounds in wet places, particularly in Beech and Alder woods; but its growing naturally is not now confined to the neighbourhood of the Black Sea, as it has extended itself to many places of the Levant, Gibraltar, Siberia, through the deserts of Mogul Tartary, to China, Thibet, Hindoostan, and North America. In some of those countries it grows most extensively in the *Pine* forests, and in such profusion as to make whole tracts appear a "sheet of purple" in the blooming season. The account which Dr. Hooker gives of this noble tribe of plants growing on the Himalayan Mountains is highly interesting; especially of those he discovered at Darjeeling, the Sikkim portion of these mountains, which is about 380 miles from Calcutta, and its elevation above the

sea is 7,200 feet, the mean temperature of the year being about 55° Fahrenheit.

"The mountain Sinchul, upon a spur of which looking north Darjeeling stands, attains an elevation of 9,000 feet, and to the west of it, next Nepaul, rises another conspicuous mountain, Tonglo, reaching a height of 10,000 feet. Due north of Darjeeling, at a distance of only sixty miles, the horizon is bounded by the great snowy range, having for its principal feature the peak of Kinchin-junga, which has lately been ascertained to be 28,172 feet in elevation, the loftiest mountain yet known in the world." Dr. Hooker thus describes his first impressions of this scene :—"Much as I had heard and read of the magnificence and beauty of Himalayan scenery, my highest expectations have been surpassed! I arrived at Darjeeling on a rainy misty day, which did not allow me to see ten yards in any direction, much less to descry the snowy range, distant sixty miles in a straight line. Early next morning I caught my first view, and I literally held my breath in awe and admiration. Six or seven successive-ranges of forest-clad mountains, as high as that whereon I stood (8,000 feet), intervened between me and a dazzling white pile of snow-clad mountains, among which the giant peak of Kinchin-junga rose 20,000 feet above the lofty point from which I gazed! The heaven-ward outline was projected against a pale blue sky, while little detached patches of mist clung here and there to the highest peaks, and were tinged golden-yellow or rosy-red by the rising sun, which touched those elevated points long before it reached the lower position which I occupied.

"Such is the aspect of the Himalayan range at early morning. As the sun's rays dart into the many valleys which lie between the snowy mountains and Darjeeling, the stagnant air contained in the low recesses becomes quickly heated; heavy masses of vapour, dense, white, and keenly defined, arise from the hollows, meet over the crests of the hills, cling to the forests on their summits, enlarge, unite and ascend rapidly to the rarefied regions above; a phenomenon so suddenly developed, that the consequent withdrawal from the spectator's gaze of the stupendous scenery beyond looks like the work of magic. Such is the region of the Indian Rhododendrons.

"The maximum of Rhododendrons appears to be in Asia, and their head-quarters are on the lofty ranges of the eastern Himalaya, where the mild and moist atmosphere is eminently suited to their habit."

The first Rhododendron introduced into England, that we have any account of, was *R. hirsutum*, obtained from Switzerland in the year 1656. This neat dwarf, evergreen, bushy shrub is now well known and admired. A second kind was introduced eighty years afterwards (in 1736) from North America, *R. maximum*, by Peter Collinson, Esq.; in 1752, *R. ferrugineum*, from Switzerland; in 1763, *R. ponticum*, *R. obtusum*, and *R. myrtifolium*, from Gibraltar; in 1780, *R. dauricum*, from Siberia; in 1786, *R. chamaecistus*, from Austria; and in 1800, the noble blooming *R. Catawbiensis*, from North America. A few others followed in successive years, till in 1818 the *R. arboreum album*, having white blossoms; and in 1820 the *R. arboreum*, having rich scarlet ones, were received from Nepaul. The introduction of this

new section of tree-like growing Rhododendrons forms quite a new era in connection with their more general cultivation in the gardens and grounds connected with the palaces, mansions, and villas in our own country. The Messrs. Waterer, of Bagshot, Knap-hill, along with other nurserymen in that locality, being favoured with a soil so admirably suited to the growth of Rhododendrons, for many years have paid particular attention not only to grow them well, but to obtain improved, superb varieties, in which they have been very successful. Visitors to the establishments of those named will have seen trees of them from nine to fifteen feet high, with heads in proportion. We are informed that there are in one of those establishments upwards of fifty acres of Rhododendrons. The Chiswick and Regent's-park Horticultural Exhibitions have, for a few years past, had a number of these superb plants from the aforesaid nurseries; but magnificent as those collections were, they only exhibit a miniature picture of what their nurseries display.

We have adverted to the eminent success of Dr. Hooker in the discovery of upwards of thirty elegant kinds, and of their introduction into this country, several of which have bloomed during the last year, and they have not only equalled in beauty, but excelled the descriptions which Dr. Hooker had previously given of them. In our number for November, 1849, we inserted a plate of one, viz., the very noble *R. Dalhousiæ*; large as was the specimen flower, it exceeds that size under cultivation in our own country.

The *R. lanatum*, which we now figure, is another beautiful flowering kind, which was introduced by Dr. Hooker. It forms a medium-sized, branching shrub. The young wood is covered with a white cottony appearance. Its fine heads of handsome flowers, in contrast with its neat, thick leaves, produce a charming appearance. Dr. Hooker highly merits the lasting thanks of all admirers of this noble family of plants for his great exertions, and so successfully crowned. Many of the kinds may now be procured at the general nurseries; all are easy of cultivation, and deserving a place in every garden establishment.

NOTES ON NEW OR RARE PLANTS.

ÆSCHYNANTHUS SPLENDIDUS.—We again notice this most beautiful showy flowering plant, which we figured last summer, and is now figured in Paxton's Flower-garden. But in neither case is the brilliancy of its fine heads of flowers equalled. It is a hybrid, between *Æ. speciosus* and *Æ. grandiflorus*, of dwarfish habit, and a most profuse bloomer, which will also succeed well even in the greenhouse. Wherever it can be grown, it ought to be. Messrs. Lucombe and Pence, of Exeter, raised this fine hybrid plant.

ALLOSURUS CORDATUS. *Heart leaved*. (Or, *Pteris cordatæ*).—This very elegant fern is a native of Mexico and New Grenada. A pretty plant of it is growing in a cool greenhouse in the Royal Gardens of Kew. The leaf stalk is about half a yard long, erect, half of its

length bearing its pretty heart-shaped pinnate leaves. Each *pinnule* is three parts of an inch long, and half an inch broad. A collection of indoors as well as outdoors ferns ought to be grown in every suitable establishment. They are of the easiest culture, and very elegant in form. The present species is figured in the "Botanical Magazine," and Sir W. J. Hooker purposes giving a figure of one or more in successive Numbers of that excellent publication.

CATTLEYA ELEGANS.—Messrs. Backhouse, nurserymen, of York, obtained this very handsome species of *stove-orchid* from St. Catherine's, Brazil. Each flower is about five inches across, petals and sepal; of a deep rosy-pink. The tubular portion of the Labellum (one inch long) is *white*, slightly tinged with yellow and pink; and the large broad lip is of a deep rich purple-crimson. It merits a place in every collection.—*Botanical Magazine*, 4700.

CÆLOGYNE CRISTATA.—A handsome Orchid epiphyte, from the north of India. Each flower is about four inches across; sepals and petals white; labellum white, with delicate yellow fringes. It is in the collection at Chatsworth, where it has bloomed; its pendant racemes, each having from four to six blossoms, were much admired.

CINCHONA CALISAYA. *The Calisaya bark-plant.*—Dr. Weddell, an English botanist, says, "From this species is obtained the most precious of the Jesuit's barks used in *medicine* (Peruvian bark), employed from time immemorial in trade, under the name of Calasaya-bark, but whose origin was wholly unknown till now." "I have already observed, that this tree has hitherto been only found in *Peru*, in the southern part of the province of Carabaya."

Its native station was found, by Dr. Weddell, to be on the slopes and precipices of mountains; and there, in the hottest valleys of Bolivia and Southern Peru, in forests.

It is a fragrant hothouse shrub, one of which has bloomed in the Horticultural Society's Garden at Chiswick. Each leaf is ovate-lanceolate, five inches long, and two broad at the widest part. The flowers are produced at the ends of the lateral shoots, in panicles, of a *pale-pink* colour before opening; then they are almost white. Each blossom is about a quarter of an inch across. Each panicle is somewhat like a small one of the Persian Lilac of our shrubberies.

GAULTHERIA FERRUGINEA (Synoneme, *Andromeda hirsuta*).—Mr. Gardner discovered this on the Organ Mountains, in Brazil, and sent seeds of it to Mr. Cunningham, of the Comely Bank Nursery, Edinburgh, where the plant has bloomed. It is a small branching shrub, the leaves being ovate-oblong, an inch and a half long. The flowers are produced in terminal racemes, all the blossoms pointing downwards, each raceme bearing from eight to twelve flowers of a pretty rosy-pink colour. In form and size, about half as large as those of the well-known Irish Heath, *Mensieri polifolia*, *purpurea*. It is a very handsome plant, blooming very freely during summer. (Figured in *Bot. Magazine*, 4697.)

HIBISCUS SYRIACUS; VARIETY, CHINENSIS.—This very pretty *Althæa frutex* is a native of China, and requires to be grown with us in the stove. John Reeves, Esq., presented seeds of it to the Horticul-

tural Society, and a plant of it has bloomed in the garden of the Society. The Editor of the Society's Journal states, "I think there can be no doubt that this, although certainly Chinese, is a mere variety, and not a well-marked one, of *Hybiscus syriacus*. It has large violet flowers, with a crimson eye, and its leaves larger, thinner, and more smooth than in the shrub out of doors,* having been grown in a stove." Mr. Fortune found it growing to a shrub, eight to twelve feet high, with "light-blue" flowers, in the hedges and on the hill sides on Poo-too-san, and other Chinese islands. "When growing in a stove, with the same kind of treatment as is required by the well-known *Hibiscus rosa-sinensis*, in a mixture of sandy loam, peat, and leaf mould, it forms a very handsome shrub, flowering in July and August." (Figured in *Paxton's Flower Garden*, plate 105.)

MORMODES SPECIOSUM.—A handsome stove orchid-epiphyte, a native of New Grenada. The flowers are three inches in diameter, of a rich golden-yellow, speckled all over with cinnamon-red, and the points of the lip are of a deep purple colour. It has recently flowered in Mr. Linden's establishment at Luxembourg.

LEPTOSIPHON LUTEUM. (Synonyme, *Gilia lutea*).—A hardy annual, which Messrs. Veitch have obtained from California. It is of a similar habit to the other well-known annual, *Leptosiphons*, having bright yellow flowers, which in one variety are of pale lemon, whilst in another they are as dark as an orange. It requires similar treatment to the other kinds mentioned. Each flower is about half an inch across.

NEPTUNIA PLENA. *The double yellow Water Sensitive.* (Synonyme, *Mimosa plena*).—It is a native of the East Indies, and of the West Indies also. Mr. Purdie introduced it to the Aquaria to the Royal Gardens of Kew, and to Syon Gardens too; but it has disappeared from both. It is a floating plant, with prostrate stems, and leaves very similar to the well-known "Humble-plant;" they are, too, as equally *irritable*, and droop as those do. The flowers are minute, collected into a head nearly two inches long, of a bright yellow colour, with very distinct deep brown anthers. It flowered in the summer in the Aquaria at Kew. (Figured in *Bot. Magazine*, 4695.)

NOTHOLÆNA SINUATA. (Synonyme, *Gymnogrammia sinuata*).—A beautiful stove Fern, from Mexico and New Grenada, now in the Kew collection. The frond is nearly a foot long, and the leaves (pinnæ) in *pairs*, or in some cases *alternate*, along the sides of the midrib; and each leaf about an inch long, somewhat cordate, green on the upper side, tinged with rusty brown, and the under side whiter and silky. It is a very neat plant. (Figured in *Bot. Magazine*, 4699.)

SPHERALCEA NUTANS.—A greenhouse, strong-growing, shrubby plant, having the habit of an *Abutilon*. The flowers, like those of the *Abutilon*, are drooping. Each blossom is two inches long, and as much across the mouth, of a deep purple colour. Very showy, and well worth possessing. (Figured in *V. Houtte's Flora*.)

RHODODENDRON THOMSONII.—This is another splendid introduction of Dr. Hooker's, named in compliment to Dr. Thomas Thomson, who

* Our *Althæa frutex*.—EDITOR.

accompanied Dr. Hooker to the Himalayan Mountains, &c. The bush grows from eight to fifteen feet high, flowers in fine heads, bell shaped, of a brilliant blood-red colour. It merits a place wherever it can be grown.

GESNERIA LEOPOLDI.—It belongs to the section of *G. tuberosa*. The leaves are very pretty, large, oval, green above, and a rich rosy-purple beneath. The flower stem rises about a foot high, terminating in cymose panicle of twenty or more beautiful blossoms. The tube is about an inch and a half long, of a rich orange-scarlet. The inside of the mouth has three rich dark spots, below which the inside of the tube is white. The flowers very much resemble some of the *Pentstemons*. They are very handsome, and the plant merits a place in every collection.

REMARKS ON THE HYDRANGEA HORTENSIS.

BY MR. P. MACKENZIE, OF WEST FLEAN, NORTH BRITAIN.

ABOUT the year 1788, the *Hydrangea Hortensis*, or Chinese Guelder Rose, was introduced into this country, and still finds a place in almost every collection of greenhouse plants, and when "well grown," is looked upon with delight by most lovers of flowers; and although generally grown in the greenhouse and conservatory, it also finds a place in the window and garden of many a cottager.

Some noble specimens are occasionally met with in the gardens of this country, some of them being five feet in height, and nearly thirty feet in circumference, producing almost every year several hundreds of "large heads" of flowers, which create a most beautiful effect, some being of a fine blue, others rose, and others white.

We are told, that—

"In Eastern lands they talk in flowers,
And they tell in a garland their loves and cares;
Each blossom that blooms in their garden bowers,
On its leaves a mystic language bears.

"The rose is a sign of joy and love—
Young blushing love in its early dawn;
And the mildness that suits the gentle dove
From the myrtle's snowy flower is drawn.

"Innocence shines in the lily's bell,
Pure as the heart in its native heaven;
Fame's bright star and glory's swell
By the glossy leaf of the bay are given.

"The silent, soft, and humble heart,
In the violet's hidden sweetness breathes;
And the tender soul that cannot part,
A twine of evergreen fondly wreathes.

"The cypress that daily shades the grave,
Is sorrow that mourns her bitter lot;
And faith that a thousand ills can brave,
Speaks in the blue leaves—'Forget-me-not.'

"Then gather a wreath from the garden bowers,
And tell the wish of thy heart in flowers."

PERCIVAL.

A few years ago, a young gardener gave a small plant of the *Hydrangea Hortensis* to a young woman in humble life, and the plant grew well under her care; she watered it well, "for the plant loves water," and she gave it as much light as the cottage window could take in, and the plant thus frequently turned half-way round, to give every part of it an *equal share* of the light of the sun. The edge of the flower-pot was ornamented with smooth white pebbles, gathered from the shallow parts of the burn, and when the time of flowering came, her plant produced *blue* flowers.

We are told that great pains have been taken by cultivators to discover under what conditions of the soil the blue colour may be insured. The *yellow* loam of Hampstead-heath will produce it, as do also the peat-bogs near Edinburgh, and the soil in the neighbourhoods of Berlin and St. Petersburg. Water impregnated with alum, steel filings, carbonate of soda, or common salt, have been known to give the *blue* to *Hydrangea* flowers, but on no one of these can any certain dependence be placed. Inglis says, that this tinge is very general in the flowers of this plant in the Isle of Jersey. The *Hydrangea* is there seen growing as a shrub at almost every cottage door, or in one of those gardens which are always planted by the houses of that island. It is often twelve feet in circumference, and is tall, and branching enough to form a shade under which one might find shelter from the sun of August. "These beautiful shrubs," says Inglis, "here (almost as trees) form the avenues in the neighbourhood, and at the season in which they are covered with their large *blue* flowers, the effect is indeed most captivating. I have nowhere seen the *Hydrangea* so luxuriant in growth as in the Channel Islands, and the flowers are most *commonly blue*, not *pink*, as we are accustomed to see them in England."

A cultivator tells us his method of cultivating the *Hydrangea* to produce blue flowers, and he has done it with success for twenty years, is "to reduce the roots of the plants considerably about the beginning of March, and to take an ounce of the oil of vitriol, and with a quill or strong feather touch the roots of the plants all over. The remaining oil of vitriol is mixed up with the soil the plants are to grow in. When they are potted, place them in shade, or some sheltered situation, for three or four weeks, until they have made new roots, then they should have more light and heat, and especial care should be taken not to let them droop for want of water.

The young man who gave the *Hydrangea* to his friend, took great delight in studying the works of CREATION, and he hailed that season with delight when the mountains raised their green tops to heaven, and the breath of spring renewed the faded glories of the vegetable world, and when working amidst expanding buds and blossoms, and his heart delighted with the music of the woods, he would "inly bless the God who had such blessings planned." He also partook of the happiness that flows from making others happy. He knew that he could not make the shadow go back upon the dial-plate, or the sun to stand on his way. He had also learned that the waning hours of life, like the sibyl's page, rise in value as they lessen, and when he would look upon

the beautiful "blue flowers" of the Hydrangea, and again raise his eyes to the blue heaven, he would say with the poet,

"Blue, blue, as if that sky let fall
A flower from its cerulean wall.
I would that thus, when I shall see
The hour of death draw nigh to me,
Hope blossoming within my heart,
May look to heaven as I depart."

Many may have seen among the trees of the wood one tree whose branches were spreading wide, and whose leading shoot was keeping pace with those around it, and birds nestled in the cleff of the branches, and insects gathered food from its leaves, and the passer by might recline under its shadow; but when spring returned, its roots were dead, no buds swelled, and the dew and the rain fell upon them in vain, instead of the green covering of leaves upon the young branches, there was nakedness. The bark that, "once smooth and shining," is now wrinkled and nothing; and when the winds and rains of autumn came, the fungi were working destruction upon the dead vegetable matter. These scavengers of nature, we are told, are ever ready in reducing corrupted and corrupting matter; they ride on the wings of the wind, they fall to the ground in the drops of every shower; they roll in the waters of every river and rill; they circulate in the fluids of every animal, and dwell in those of every ordinary plant; and they are probably dispensed through all mould upon the earth, and lodged in the pores of many stones. Hence Linnæus called them "Nomades, or wanderers," and no epithet can be better applied, as we know of no place from which they can be excluded.

Disease came suddenly upon the young gardener, and the pulses of life soon began to flow faintly, and he had soon to exclaim,—

"Withering, withering—all are withering,
All of Hope's flowers that youth hath nursed;
Flowers of love too early blossoming,
Buds of ambition too frail to burst!"

But He who refreshes the fields with His showers, and sweetens the breeze with roses, was his comfort in death. The animating smile of friendship also shined upon him, and sometimes dispelled the darkening cloud of sorrow; but sweeter far was his comfort when the rays of mercy broke through the shadows of the tomb.

"The chamber where the good man meets his fate
Is privileged beyond the common walk
Of virtuous life; quits in the verge of heaven,
You see the man, you see his hold of heaven.
Heaven waits not the last moment; owns her friends
On this side death; and paints them out to men."

After his death, the young woman watched over her Hydrangea with fond regard. The form in which it was trained by her departed friend was kept as nearly as possible; the flower-pot was not changed, although it required changing, for the plant grew too large for the pot. The roots, having no room to expand, became injured, and the plant got stunted in its growth. Many a plant has been killed with kindness,

but this one suffered from "her regard to him who gave it to her." The leaves lost their dark green colour, and when they faded and fell off, those that succeeded them were thin, small, and wore a sickly aspect. The wood was weakly, and the heads of flowers that once grew large and luxuriant, were now few, and greatly diminished in size; but "still they were blue."

Jeremy Taylor tells us, that man comes into the world like "morning mushrooms," soon thrusting up their heads into the air, and conversing with their kindred of the same production, and as soon turn into dust and forgetfulness.

Years have rolled past since the young woman died, and her grave is almost to the world unknown. Some may ask the question,—

"Who sleeps below? who sleeps below?
It is a question idle all.
Ask of the breezes as they blow;
Say, do they heed or hear thy call?
They murmur in the trees around,
And mock thy voice, an empty sound."

But the *Hydrangea* still lives, and has received kind treatment from her sisters, who bestow great attention upon the plant "for the sake of the departed." It is the "ornament" of their cottage in summer and autumn, with its large and luxuriant foliage and blossom, which rewards them for their care and trouble in guarding it from danger in winter and spring.

We are informed that "God giveth not as the world giveth." There is a peace which cometh from Him, and brings healing to the heart. His religion would not have us forget, but cherish our affections for the dead, for it makes known to us that these affections shall be immortal. It gradually takes away the bitterness of our recollections, and changes them into glorious hopes, for it teaches us to regard the friend, who is with us no longer, not as one whom we have lost on earth, but as one whom we shall meet as an angel in heaven.

REMINISCENCES OF GARDENS.

BY RISEMARA.

WHILST the descending snow is concealing the winter flowers, which until lately have been blooming as if the cold weather had departed, and there is no enjoyment in the garden, it is pleasant to recall to recollection the floral beauties of a past year.

At an early period of the spring, before leaves were on the trees, I saw in a gentleman's garden at Wisbeach, a fine specimen of the white-flowered *Ribes*; its delicate blossoms seemed to cover the whole shrub, and had a conspicuous effect, and one by no means in unison with the season. Having before only seen small specimens of this shrub, I had not sufficiently appreciated its beauty. In the gardens of Hampton Court Palace, I saw a few days after a fine *Magnolia* conspicua, trained

against the wall, "full of white flowers," whose fragrance penetrated the air to some distance. In the conservatory is a Myrtle, once the property of King William the Third. In a round bed, a tree puzzled us; its blossoms were a pale pink, somewhat resembling those of the Medlar; no other fruit tree was in bloom, and we sought in vain for its name. I saw with great pleasure, in the Palm-house at Kew, the nodding *Renealmia*, in full flower. This curious plant had been familiar to me from childhood, from the coloured engraving of it given in *Thornton's Botany*, but I had never before seen the reality, and greatly admired this specimen. The Mango tree was blooming; but I must not linger at Kew, but traverse, in thought, the wide space between it and Felinstow, in Suffolk, where the garden, in the Italian style, belonging to the Marine Villa of Lady Harland, interested us from its novelty. There are several terraces, the ground of which was covered by large wall-flowers of great variety of tints, viz., pale primrose, lilac, mottled, &c. Other plants grew between the wall-flowers, and to stand just in front of the sea-wall and look up to these terraces, had quite an animating effect. In a sheltered part of the grounds we were surprised to see a fine specimen of *Piptanthus Nepalensis*, having thus early its yellow Laburnum-like flowers fully expanded.

In the summer we again visited this garden. Its beauties then consisted in many rich groups of different coloured "Sweet Peas and Roses," all in bloom, rising, as it were, out of a ground covered with white candy-tuft. Again to look up the terraces presented a gay and novel appearance. The soil here abounding in crag, is especially suited to horticulture. Our summer rambles extended to Lowestoft, in which vicinity the hot-houses, grounds, and hall of Somerleyton attracted our attention. To describe the latter will not comport with the FLORICULTURAL CABINET, but I may mention the magnificent, ancient "Avenue," of itself well worthy of inspection; and there is also a smaller one. The conservatory contained striking specimens of *Pelargoniums*, grown to an immense size, and the blossoms open, as it were, all at once. I believe the plants were a yard in diameter, and yet the pots they were in were not so large as I should have imagined. The *Ericas*, *Epacris*, &c., were grown in very large pots; the effect of these plants was exquisite. We were told they had grown a *Calceolaria* a yard and a half in diameter. A *Crassula coccinea*, in full splendour, appeared to me near that size. In the stove, were many rare plants. The *Allamanda Schottii* was in full luxuriance, its large, rich yellow blossoms having a glowing effect. The pink *Dipladenia crassinoda* was very elegant. The *Hoya imperialis*, with its purple flowers then shading into white, was new to me; as also the delicate *Hoya bella*.

At Aspley, in Bedfordshire, in the autumn, amongst many beauties I saw, under the management of a lady, such superb plants of *Gesneria zebrina*; they were, I believe, more than two feet high, in full flower. The leaves were large and presented almost every shade of brown and green-velvet. So much variety of tints prevailed, that the splendour of the leaves made me almost overlook the flowers, fine as they were. The *Justicia carnea* was beautifully in bloom, and a "great acquisition" it is to the greenhouse.

From thence we visited, at Olney, the summer-house of Cowper, the poet. Close to it was a large *Hepatica*, with variegated leaves. The golden hue contrasted with the green, resembled at a distance a rich cluster of flowers. No blooming beauties adorned the Wilderness at Weston, and I looked with painful interest from the poet's bed-room there into his once favourite, spacious garden.

Attracted by the scenery of Bolton Abbey, Yorkshire, we stayed at the Bridge Hotel, where, close to the garden-side of the house, the *Meconopsis Cambrica* (Welsh Poppy) was growing wild, having seeded itself all around, its yellow flowers cheering the fading tints of autumn.

CULTIVATION OF ACHIMENES.

BY MR. JOHN BURLLEY, OF WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON.

THESE very pretty blooming plants are, no doubt, grown by most of your readers who are in possession of a greenhouse and frame. To such persons, the following remarks on the cultivation of the *Achimenes* will, I think, be found useful.

SOIL.—They thrive best when grown in the following compost:—one-half of good turfy peat, broken in lumps, and the other half to consist of equal parts of turfy loam, leaf mould, and well-rotted cow-dung, to which add a small quantity of sand and broken bits of charcoal; the whole to be well mixed together.

In potting (if pots are used), let them be well drained, and over the broken pot let there be upon it the roughest part of the soil, and fill up with the finer.

In growing for extra specimens, pans should be used, being a foot or more across; and as the roots do not strike deep into the soil, the pans need only be six inches deep. Grown thus in a mass, a profusion of bloom is produced, which produces a fine appearance.

Previous to the tubers pushing, they should be carefully turned out of the pots or pans they were grown in last year, and be placed in small pans in some fine mould, but *slightly* covered, and having them put into a hotbed frame to start their growth, where the temperature is from 65 to 75 degrees. Let them be kept tolerably moist, and when shoots have pushed, they may be removed from the hotbed, and placed in their flowering-pots or pans. In doing this, the tubers must be placed at equal distances over the surface of the pot or pan; for the pan I have described, ten or twelve tubers are required. After potting, those that have the convenience of a stove, or close warm pot frame, should place the pans in it, and keep them near to the glass. When they have grown to about five inches high, the top should be pinched off; this will cause them to break laterals freely, and the plants will become handsome and dwarf. Some varieties that are strong growers will require stopping twice. As they break out strong, they should be sticked out and tied regularly all round the pan; and when in flower, a fine effect will be the result. When in bloom, they like a *shady* part of the house; in fact, they prefer, through the summer, a partially-shaded house. As they advance in growth, let them occupy a pleasant place

in the greenhouse, admit air on fine days, and in the heat of summer give a little at nights. I should have mentioned, that in potting them, let the tubers be placed about one inch below the surface, and let them be watered with a fine-rose pot, to settle the soil around them. When they have done flowering, they should be placed in some convenient corner of the house or shed, in the same pans or pots they have bloomed in; but do not expose them to a temperature under 40 degrees, or the tubers will be injured. Do not turn the tubers out of the pans or pots after blooming, as they sometimes rot; but in spring, when wanted, turn them out and pot them, as before described. The time for potting in spring may be various, as successions may be kept up; for instance, one batch may be started at the middle of February, another batch the middle of March; and to those who have a stove, the middle of April may be used for a late batch. For late breaking, the *Achimenes pedunculata Hillii* should be used, as it is best adapted for late flowering. Few other remarks are necessary, as the above embraces the treatment required the season round; and if it be duly attended to, the blooming season will amply compensate for the trouble—I should have said pleasure—there has been taken with them.

I now give the names of a few good varieties, to help those that have not got a collection, to make one, if they wish to grow these beautiful flowers:—*Amœna*, *Baumania Hirsuta*, *Bodmerii*, *Bœckmanii Hirsuta*, *Coerulea*, *Carymbosa*, *Coccinea Grandiflora*, *Fimbriata* or *Gloxiniiflora*, *Jaureguia*, *Hillii longiflora Alba*, *Jayii*, *Margarettæ*, *Picta*, *Floribunda elegans*, *Tugwelliana*, *Venasta*, *Longiflora major*, *Multiiflora*, *Purpurea magnifica*.

It sometimes occurs that the plants are affected by mildew; a little sulphur vivum dusted over and under the leaves will soon destroy it. If attacked by red spider, place the plants in a small frame, and fumigate carefully with sulphur; after which, give them a good syringing at the under side of the leaves.

THE CALCEOLARIA.

BY A YORKSHIREMAN.

IT has often been to me a matter of great surprise that the large flowering, or, as they are generally called, *herbaceous* Calceolarias, are not more cultivated. You may visit, in this neighbourhood, a dozen gentlemen's gardens, and not see more than a dozen plants of this beautiful section of Calceolarias, and those few but miserable, half-starved, half-choked specimens, which, for the credit of both the gardener and Calceolaria, would be better on the rubbish-heap.

If you inquire the cause why they are not grown, ten out of twelve persons will confess "that they are beautiful things;" but, says one, they are so subject to the green-fly; another says they are so bad to winter—I invariably lose them at that season; a third says that they die as soon as they have done blooming; and one good gardener told me the other day, "If a person gets them to do well once in his life-time, he has had his share of good luck." Now in

answer to the first, are not Geraniums, Cinerarias, and a host of other plants which these men "grow respectably," subject to the green-fly? and will not the smoke of tobacco, with which he kills the fly attacking his Geraniums, kill the fly which is on Calceolarias? As to their being hard to winter, it is more fanciful than real. If a person attempt to keep the "old plants" it may be true; but if cuttings are struck in August or September, and be potted in 4-inch pots in October, and kept in a cold frame until Christmas, then placed on a shelf in the greenhouse "near the source of ventilation," not kept *too wet*, not more than one in a hundred, if even that, will go off in winter.

Then as to being subject to die soon after blooming. Now this is the *critical time*, I allow, but it is as much the gardener's neglect as the tendency of the plant; not but he has many extenuating circumstances, for it happens that when the Calceolaria requires most attention he has, in consequence of other duties, least time to attend to them. Perhaps circumstances have previously tended to exhaust the plants; such as blooming them in small pots, and in a house where *fire heat* was employed, perhaps for grapes, &c., or probably the sun shining *direct upon them*, and not having sufficiency of air. All, or some of these causes, together with the large quantity of bloom they invariably produce, will, I have no doubt, cause exhausted nature to give in.

But if the grower of Calceolarias would consider of where they are natives, and under what circumstances they there grow, it would point to an entirely different mode of treatment, and the complaint would vanish, at least to any serious extent.

They are natives of the Andes Mountains, through Chili, Peru, and Patagonia, and there form a belt round the hill not far below the *snow line*, and the south winds from the Pacific Ocean blow on them, loaded with moisture, during eight or nine months in the year.

Now, being *natives of the hills or mountains*, (which shows that they want a light soil and abundance of air), *not far below the snow-line*, that the melting snow in summer will plentifully supply them with *cold water*, which plainly says *no codling* for me. Most plants from warmer countries are benefited by having their *roots warmer* than their *branches*; but with Calceolarias this is not the case, which shows that we should not inquire from what *country* a plant comes, but under what circumstances it *grows* in its native habitat. *The south wind blows upon them from the Pacific Ocean for so many months in the year*, again shows that *air*, "*abundance of moist air*," (for the wind blowing from the sea will be loaded with moisture), not dry, parching winds of our March, nor the *hot dry air* of our July and August, but an imitation of our soft balmy days of April and May. Though they enjoy "*abundance of moisture*," actual *stagnant damp* is certain destruction.

If the cultivation be carried on on the above principles, these plants, when in bloom, will be clothed with fine green healthy foliage, which is "*a certain sign that the roots are active*." When the plants have done blooming cut off the flower-stalks, but not too low, "*just above the foliage*," and remove them to a *cold frame*, facing *north or east*. If any green fly appear, immediately fumigate well with tobacco. In the day time keep the lights *close*, except in *very warm* weather, when

tilt them ; shade also from the glaring sun. At night *remove* the sashes altogether (except in very heavy rains), as the night dews are very beneficial ; by this treatment they will soon begin to throw up young shoots.

Propagation.—Select a place shaded from the mid-day sun, say under a north wall or hedge (not under the drip of trees) ; spread six inches of rough cinder or coal ashes over the space requisite to hold the number you want, then put on six inches of the following compost :—leaf-mould, loam, and silver-sand in equal quantities ; the whole passed through a fine sieve. Let the *rough* be placed next to the ashes, and over all this put half an inch of silver sand ; water the whole ; place on the land lights to mark the places. Take young shoots, as above mentioned, in the beginning of September, prick them in the prepared bed, and place over them the glasses, keep them close, syringe them frequently, and not many will fail to grow.

Time of potting.—Pot the cuttings, when rooted, into four or five-inch pots to winter in. In February give them a shift into six or seven-inch pots, and when the roots reach the outside of this soil put them into their blooming pots, say from eight to twelve-inch pots, according to the probabilities of the plant.

Soil.—For wintering, loam and leaf-mould one part each, and half a part of sand ; for February potting, loam and leaf-mould one part each, sand and rotten dung half a part each, and for final potting add more dung.

(We shall be obliged by the other communication.—EDITOR.)

CULTURE OF THE CINERARIA.

BY MR. F. THORNE, OF SHUCKBURGH PARK.

THIS genus may now be classed amongst the “showy early flowering” plants which this country possesses, and, with judicious management, may be had in bloom nearly *all the year*, by re-potting at different seasons. From January to the end of June is the proper time to have them in the highest perfection, and when highly cultivated during these months they are very beautiful, and the admiration of all who are lovers of flowers and fond of seeing a perfect mass of bloom, almost in numberless colours, when grown from seeds. These plants, by some, have been discarded through being so very much subject to the Aphis (green fly) ; this, to a certain extent, can be greatly prevented by keeping the plants in a vigorous state of growth, and by removing all dead leaves, which I find to be the case when a dense foliage is produced. At no time allow the plants to suffer from want of water, as they are very gross feeders of this element, particularly so when they are fairly established in their flowering pots. Treated as above described, I have observed that the green fly seldom makes its appearance. A slight fumigation, at times, is quite indispensable, as a preventative is better than a safe cure. During April and the following months, as the flowers begin to fade, the tops must be cut close off and set out

of doors, when all danger of frost is over. In this state they must remain until a fresh growth is produced, at which time they must be divided and re-potted into sixty-sized pots, using leaf-mould, loam, and sand; then being placed in a cool frame, shaded from the sun, for about two weeks; after which they are again set out of doors in a shady situation, and re-potted into larger sized pots when rooted sufficiently. I believe a greater "mass of bloom" may be obtained when the plants are grown in thirty-two's, than in pots of a larger size; but where "large specimens" are the object in view, twenty-four's and sixteen's must be used; in these sizes they make enormous plants. The following compost I generally use, which I find the plants to grow in very luxuriantly. Two parts loam, one leaf mould, and one part "two years old cow-dung, with about one-fourth silver sand," placing in the bottom of the pot, *above the drainage*, clay and burnt earth, to act as absorbents. Water regularly with that mixed at the rate of one gallon liquid to sixteen gallons of water, the effect will be surprising. A collection of these charming blooming plants merits a place in every green-house, pit-frame, or sitting-room window, being beautiful as well as fragrant.

EXTRACT OF REMARKS ON MAGNOLIA GRANDIFLORA.

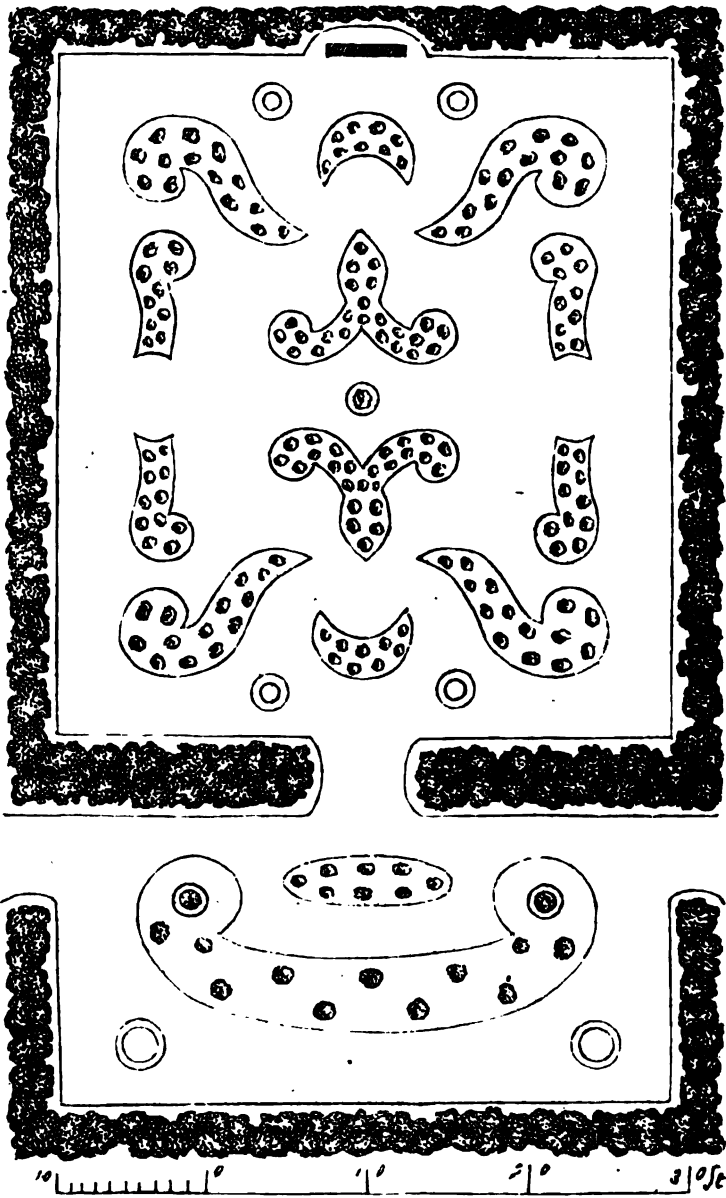
BY MR. JOHN SAUL, OF WASHINGTON, UNITED STATES.

IN the Horticultural Society's Journal, vol. viii., page 22, there is an interesting article on this noble plant. After remarking about its growth in America, he observes, "If cultivators in England, therefore, wish to follow nature and attain success, they must plant 'in *well-drained* soil,'—any soil will do, in an airy, open situation, where the tree will get all the sun possible. No cold in England will hurt the plant, provided the new wood is *well-ripened*, and it may be planted as standards in the most northern counties. In this country, where the wood is well matured, young plants bloom most abundantly during June. I have observed many persons in England house the plant in winter; there will be no necessity, if the young wood be ripe. How often is this plant turned out against a south wall, in a well-made border, and well sheltered? In such situations the plant grows freely, very often too freely, *and late*, if it is not injured by frost; the wood is then so soft and unripe that it cannot produce a bloom until the plant is old and stunted. The only trees in Britain which I have seen 'properly placed,' were in the Isle of Wight and Devonshire; there they appeared to me to have been planted chiefly in the natural 'well-drained' soil, in which they did not grow so rapidly as in rich borders. They grew moderately, very bushy, ripened their wood well, and the result was abundance of bloom.

"If this tree looks grand in sequestered spots, will it not also prove effective in masses or clumps in the garden, the shrubbery, or the park? There it would be at home, giving a massiveness and boldness to the landscape."

PLANS OF FLOWER-GARDENS.—By T. RUTGER, Esq.

No. 3.



A YOUNG lady of my acquaintance having asked me for a design for a small parterre, so as to leave ample space on the gravel for walking among the beds, I presented to her the accompanying sketch, which, being approved of, was laid out, and has been much admired. Box edgings form the shape of the clumps. The small circle in the middle, and those, one in each end of the scroll, are for pillars of Roses : and the vacant circles for vases, to contain choice flowers. The scroll and long oval clump, are intended for a small Rosarium, and for Dahlias, planted between, to succeed the Roses when out of bloom. A seat is placed opposite the entrance.

BERBERIS PALLIDA, (or, *Mahonia pallida*).



THIS handsome evergreen shrub is a native of Mexico, where it grows from six to eight feet high, on mountains thinly covered with Pinus

Llaveana. It is a beautiful graceful plant, blooming in spring; the flowers are nearly *white*. The berries are of a deep purple colour, being produced in *large*, loose panicles, have a charming appearance during autumn and winter. It is a free growing shrub, growing best in equal parts of sandy loam and leaf-mould, with bits of charcoal and bone-dust sprinkled therein. It flourishes out doors in warm sheltered situations; but it thrives best in a greenhouse, and being in a pot the plant is easily kept to any desired size. All the evergreen Berberis or Mahonias merit a place in every establishment. Most of them are admirable for planting as underwood; they soon make a beautiful evergreen cover. They may be procured at a very reasonable price, and grow freely. The *B. aquifolia* (*Mahonia aquifolia*) is a charming underwood shrub. The scarce sorts, being grafted or inarched into a stock of this species, soon unite. The best time to do it is just before the plant pushes in spring.

MISCELLANEOUS SECTION.

FORMATION OF BUSHY PLANTS OF THE PELARGONIUM.—By the skill and industry of the floral plant cultivators of our own country, we now not only possess the most extensive collection of these plants, but the most superb varieties. They are divided into several sections, but alike admirable, and which are not only unequalled, but rank pre-eminently superior to the collections of any other country both in plants and flowers. We think, that the nearest approach to perfection in the formation of plants, and display of bloom, has been realized in this universally-admired class of flowers, evidence of which has appeared at the various EXHIBITIONS both around London and throughout this country.

Such exquisite specimens are only produced but with practical skill and careful attention, commencing with the plants at their earliest stage. The object our growers have in view is to obtain the greatest display of vigorous bloom, and upon the best formed plants. The "pyramidal"-shaped would be the most elegant; but after many attempts it is found that a regular disposition of the flowers over the entire plant cannot be obtained, for the most vigorous shoots and flowers are at the upper portion of the plant, and the flowers at the lower part are but thinly scattered and of inferior size. To obtain fine blooms, "equally" distributed over the entire plant, low, spreading, bushy plants are much the best.

Many of our readers do not know the exact routine of management in producing such plants, and some useful particulars relative to that subject having been inserted in that very excellent work, *The Gardener's Magazine of Botany*, published by Messrs. Orr and Co., of London (see Notice to Correspondents on Wrapper of this Number), and in the *Flore* of Mr. L. Van Houtte, of Belgium, which details are illustrated by engravings, and from the following extract our readers will see the practical process. It commences with "having a *young plant*, recently

struck, in a small pot, in OCTOBER," and proceeds to a fully formed plant suited to embellish any floral establishment.

The following treatment is particularly adapted to plants of the *Fancy Class Pelargoniums*.

In October the young plant must have the head cut off, leaving but three buds to push shoots, as is represented in Fig. 1.

When the three shoots have grown about five inches long the ends must be stopped, in order to induce them to push side shoots, and which are allowed to bloom the following summer. Care is taken to have the wood well ripened by full exposure at the closing period of summer to the sun; the shoots are then cut in and the pruned plant is as represented in Fig. 2.



Fig 1.



Fig. 2.

The plant is then grown and bloomed a third season, and during this season the shoots are thinned and arranged by securing them in proper position, in order to duly form the plant. To effect this, the lower branches are carefully bent down and secured in a depressed manner, by means of pegs or sticks; or having a wire girth round the pot, just under the rim, the shoots are tied down, so as properly to distribute them in every part of the plant, and arrange the branches into the position they are intended hereafter to occupy. After blooming, and having the wood properly ripened, it is pruned, and the branches are secured to their permanent situation, as represented in Fig. 3.

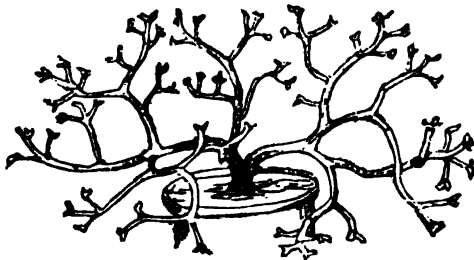


Fig. 3.

The following year the plant will be as large as is required for all ordinary purposes. And one, properly treated, of the more vigorous growers, would now be several feet across: a celebrated grower of the

Fancy Class states, "from four to six feet in diameter, and having a thousand trusses of flowers."

A plant having been duly attended to during its fourth season, and being pruned, is represented in Fig 4.

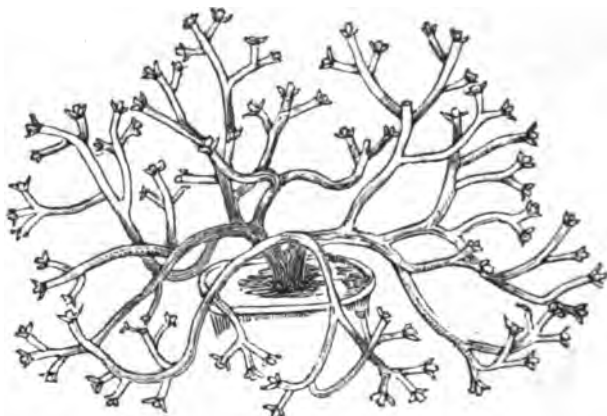


Fig. 4.

This routine of culture in formation of specimens is equally applicable to the large growing class of Pelargoniums, but it is not now customary to have plants of the fourth year's standing for competition at the Exhibitions. Formerly long-legged ones, many years old, were brought on such occasions.

GARDEN LABELS.—Experiments are the stepping-stones to progress, and progress is the pioneer of discovery. I hit upon a plan lately for labelling my border-flowers, which seems likely to prove a good one. The label is of wood, but instead of being *written* upon, a number only is used, and this number is *burnt into the wood*. The following simple plan effects the object:—Get two flat pieces of iron, one of them half an inch, and the other three quarters of an inch wide; let both be about seven inches long, an eighth of an inch thick, and tapered to points at one end; leave the narrow piece of iron flat, but curve the broad end of the other into the form of a C; insert the pointed ends of each into a cork, to serve for handles; and with these tools, which a blacksmith will make for twopence, you may mark any number of labels you please, using, however, *letters* instead of *ciphers*—thus, 90 would be XC. It is a nice amusement of a winter's evening to sit by the fireside, with a table before you covered with labels, and by means of these irons (I use two), inserted in the fire, stamp the labels, one after the other as the irons become hot. Practice makes perfect, and a few trials will insure accuracy and despatch. The advantages of the plan are simplicity, cheapness, and durability, besides which you have the operation in your own hands, and can mark any odd label, or number of labels, as you want them. A lady, who is one of my family, says that the plan is a capital one; the truth is, that she excels me in marking the labels, both in speed and execution.—(*Cottage Gardener*).



WE refer our readers to the last month's Calendar for many things which require attention now. Finish pruning Roses. Many kinds of shrubs may be increased by layering, similar to Carnations. Perennial herbaceous plants increase by division. Hardy annuals, to bloom early, may be sown. Bedding plants must be provided by sowing, striking cuttings, repotting last autumn-struck cuttings, &c. Sow Stocks, Asters, &c., in pots or beds.

FLORISTS' FLOWERS. — *Auriculas* and *Polyanthuses*: admit air on all favourable occasions. Manure-water should be given once a week. Sheep's-dung, put into a tub, and soft water poured upon it, in quantity so as to form a strong liquid, is very serviceable. The dung must be collected for a few weeks before using. Old cow-dung will also answer the same purpose. Sow seeds of above. If too many blossoms show, thin them directly.

Anemones and *Ranunculuses* must be finished planting immediately. If no bed has been prepared for them, it may be made by taking out the soil to the depth of fifteen or eighteen inches, and replacing it at the bottom with a layer three or four inches thick of cow-dung, and filling up with soil composed of *decayed* turfs taken from a loamy pasture. Such as were planted in the autumn will now be making their appearance above ground. It is very necessary to keep the soil *closed firmly* round the crown of the plant; when this is neglected, the bloom suffers. *Tulips* require continued attention, as directed last month. Any that happen to be affected with canker will appear sickly; the roots should be examined, and the damaged part cut clean out. If left exposed to sun and air, the parts will soon dry and heal. Avoid *frosty air* getting to the wound by exposure. If by any casualty the plants are frozen, then, early in the morning, sprinkle the tops over with cold water, and keep them covered over for an hour or so before they be exposed, as the sun must not be allowed to shine upon them until the frost is all out. *Carnations* and *Picotees* may, at the end of the month, receive their final shifting. The pots known as No. 12's are the size usually employed. In potting, place at the bottom two inches deep of crocks, to give free drainage. Use a compost—which is best if it has been previously prepared and become well incorporated together—of these proportions,—two barrows full of fresh yellow loam, three of well-rotted horse-dung, and half a barrowful of river-sand, well mixed; plant in it *without sifting*, by breaking very well with the spade. Place the plants in a sheltered situation out of doors, but where they will have *plenty of air*. Where frost has disturbed the roots of

Pansies in beds, they should be pressed into their places, and a top-dressing of rich mould given to them all over the bed. They *must* be screened from cutting winds by fir, yew, or whin branches. In forming new beds, the situation must be where there is the benefit of free air. Plants in pots, under glass, will require shifting into larger sizes; for as this is the period when they begin to grow, they will soon become weak, and bloom out of character, if confined in small pots. If beds of *Pinks* were not planted in autumn, early in this month they may be. In removing the plants, whether out of pots or open ground, be careful to retain all the ball of roots, and as uninjured as possible. Protect beds from cold easterly winds. Press the soil firm round the plants.

IN THE FORCING STOVE.

Sow seeds of any tender and half-hardy annuals that have been omitted. Sow liberally of *Cinerarias* and *Chinese Primroses*, for if the plants be properly attended to, they will produce a fine bloom for autumn. In watering tender annuals, &c., it must not be over the tops, or many of the sorts will be rotted by it. The best method is to flood over the surface of each pot, always using tepid water. Annuals sown in frames—*Cockscombs*, *Balsams*, *Thunbergias*, &c.—if large enough to pot, should be in 60-sized pots.

Sow seeds of *Dahlias*, *Fuchsias*, &c.,. Seeds of most greenhouse plants will do well if sown now. Repot and forward *Amaryllises*, *Gesnerias*, &c., as directed last month. *Ipomeas*, *Echites*, and similar plants, may be trimmed in, disrooted when necessary, and brought here to excite early growth.

IN THE GREENHOUSE, &c.

Continue to admit all air possible. Repot the various inmates, as required, from time to time, and examine to see that the drainage is free. Supply *Cinerarias* with manure-water occasionally. Save them from green fly; smoke or tobacco-water must be applied at the first attack. Pot off seedlings, &c., for successive bloom. Immediately stop the shoots of *Pelargoniums* which are to bloom from June, in order to induce new lateral ones. Let *Pelargoniums* have plenty of air, but close up early in the afternoon. Syringe overhead twice a week after shutting up. In watering, give enough to moisten the entire soil.

Cupheas, *Calceolarias*, *Verbenas*, *Petunias*, *Fuchsias*, and other young stock, must, as growth advances, have the shoots stopped, which will cause them to be bushy, forming cuttings of the young shoots.

Camellias exhausted with flowering should now receive a little extra attention; remove them to a cooler situation for three weeks, on the principle of slow breaking, and give the root a chance of overtaking, in some degree, the expenditure which has taken place in the system. Any pruning necessary perform at this time; no plant can succeed better, after judicious pruning, than the *Camellia*.

See that *Lilium speciosum*, &c., are not saturated by watering.

BRIEF REMARKS.

HORTICULTURAL SOCIETY, FEB. 15.—Few plants were produced on this occasion, owing to the sudden severity of the weather, the thermometer on the night previous to the meeting indicating no less than 14° of frost. This will sufficiently explain why no Camellias were shown, although they formed one of the subjects for which special prizes were offered at this meeting. Of other plants Mr. Glendinning, of the Chiswick nursery, sent a variety of *Fraxinea hydrangeaeformis*, called *elegans*, which was stated to be an improvement on the species, inasmuch as its general constitution was more robust, its leaves broader, and not liable to die off at the ends, a fault which belongs to the original plant. The same exhibitor obtained a Certificate of Merit for *Rogiera amona*, a plant of considerable beauty, introduced into this country through the German gardens, and a similar award for *Geissomeria nitida*, a scarlet-flowered Acanthad, nearly related to *Aphelandra*, that when fully in flower, which the plant in question was not, promises to be very handsome.

A Certificate was awarded.—The Hon. W. F. Strangways again furnished some Hellebores, and cut specimens of other interesting plants, which are at present in flower in his garden at Abbotsbury, in Dorsetshire. Among them was the rare *H. abchasicus*, a pale Russian species little known; and the *Euphorbia mellifera* from the Canaries, a bush quite hardy at Abbotsbury. Mr. J. Young, Taunton, Somerset, also sent a branch beautifully in flower of *Acacia dealbata*, a handsome species, concerning the hardiness of which several notices were published in our columns last year. Mr. Young stated that the tree from which it was taken had been growing in his garden about twenty years, away from any wall or building, and without any protection; and that it is at this time, notwithstanding the frost, a truly beautiful object, about twenty-three feet high, and covered with its honey-scented flowers.—Among miscellaneous subjects was an example of the kind of bell-glasses the French use in the neighbourhood of Paris for promoting the growth of Cauliflowers and other market-garden crops which it is desirable to obtain early. It was made of good strong glass, about fifteen inches high, and nearly the same in width at the mouth. It was stated that such glasses cost only about $7\frac{1}{2}$ d each, and it was hinted that it might be found worth the while of English glass manufacturers to make similar protections for the benefit of gardening in this country.—Mr. Adamson, jun., furnished specimens of his new Portland cement edging tile, mentioned in our report of the Society's Garden at p. 87. A gas heating contrivance, the invention of Mr. Cuthill, of Camberwell, was exhibited. It consists of a hemispherical cast-iron chamber, to the top of which is attached a pipe which, after being led along the house to be warmed, is returned, and discharges itself outside. The chamber is intended to be built in the end wall with as much of the dome inside as possible, leaving an opening outside (to which a door is affixed) for introducing the gas-burner which is to heat the apparatus. It was stated, that if it is possible (which Mr. Cuthill is confident it is) to render the joints sufficiently tight to prevent leakage, this invention might be found useful, near places having gas laid on, in heating winter gardens and small houses, which it is very difficult otherwise to warm without overheating. Mr. Cuthill stated that a contrivance of this description in a greenhouse 12 feet by 8 feet, has been found to work satisfactorily with a gentleman in the Old Kent-road, and that a heat of 45° could be maintained with ease when there were 12° of frost outside.—From the garden of the Society came *Acacia lxiophylla* and *linifolia*, *Rhynchospermum jasminoides* (frost-bitten on its way to the meeting in a covered van), *Correa Goodii*, three varieties of *Euphorbia*, *Echeveria rosea* and *retusa*, two useful winter flowering hardy greenhouse plants, three Camellias, cut flowers of *Luculia gratissima*, which is now blossoming beautifully in the great conservatory; a good example of Cardoon (*Cardon de Tours*); and Lettuces *Laitue chou de Naples*, from the south slope of a ridge, and *Romaine vert d'Hiver*, both excellent sorts for winter cultivation.

IMPROVEMENTS IN THE PRESERVATION OF WOODS AND METALS FROM DECAY.—(Machaboe's Patent, enrolled Dec. 8.)—The composition specified in this patent is formed by melting together $3\frac{1}{2}$ parts of vegetable tar, one part of mineral tar, one-sixth part of resin turpentine of *Pinus Larix*, one-third part of wax, one-sixth part of white grease, with or without the addition of one-third part of Roman cement, and a similar quantity of hydraulic lime in fine and sifted powder. The mineral ingredients are added to the others when in a boiling state, but are only required in those cases in which the material is to be coated with the composition of mastic is to be exposed to the action of heat. The composition is applicable to wood, metal, brickwork, &c., the surfaces of which must be well cleaned prior to its application, which may be effected by means of a brush, whilst in a heated state, and any number of coats may be employed. When the composition is used

for covering the inner surfaces of walls, a coating of plaster is applied over the mastic.
—*Pharmaceutical Journal*.

IPOMOPSIS ELEGANS.—In the *Horticultural Society's Journal*, Mr. John Saul, of Washington, United States, writes, that this handsome flowering plant ripens seed in abundance in the open air in that country, and when a portion of it is allowed to fall upon the ground the plants soon spring up, in borders, rock work, or even walks. And although the winter be severe, even to six degrees below zero, the plants are not in the least injured, but bloom vigorously the following summer. It is impossible for a person who has only seen the miserable examples of this plant usually grown in England to form any idea of the brilliancy of colouring (scarlet) which the blooms acquire here. If the flower-spike is removed just when "its beauty begins," so as to prevent its seeding, it will throw out many side shoots, which will continue in bloom during the whole summer. (Some years ago, we saw in England, and mentioned it in this magazine, a number of splendid specimens in bloom, which had been stopped as here described. They had large heads of their very showy blossoms in numerous long spikes.—Editor.) It must be recollected too, that all this is going on under a bright sun and burning heat. Mr. Saul adds, "Were I now cultivating this plant in England, I would sow the seed out of doors about August on rock-work, or a dry border; thin the plants, if too thick, and keep free of weeds; this would be all required until spring. If on a dry bottom, cold will never harm them. If too thick, transplant some in April, and they will take to their new quarters as free as cab-bages. When sown, let the site be dry, very warm, and where they will have full sun. Transplanted ones also be so placed." (The specimens we saw, as above referred to, were so superior to what we had previously seen, that they quite astonished us.—Editor.)

WINTER BLOOMING PLANTS—The following are fine ornaments for a greenhouse, conservatory, or sitting room during winter:

The *Chinese Primula*, as a small winter flowering plant, has no equal. On account of its compactness and beauty, as well as the length of time it lasts in bloom, it is well worth attention and space; it flowers best when most wanted, *i. e.*, between the months of November and May; it is, however, seldom grown well; the seed, generally speaking, is not sown early enough. To have it very fine, sending up dense bunches of flowers, larger collectively than a man's hat, the seed should be sown some time between August and February. When very large bunches are wanted, three plants should be grown together in a pot; they thrive well in leaf and peat, mixed with sand. The old plants are eligible for autumn flowering or the borders.

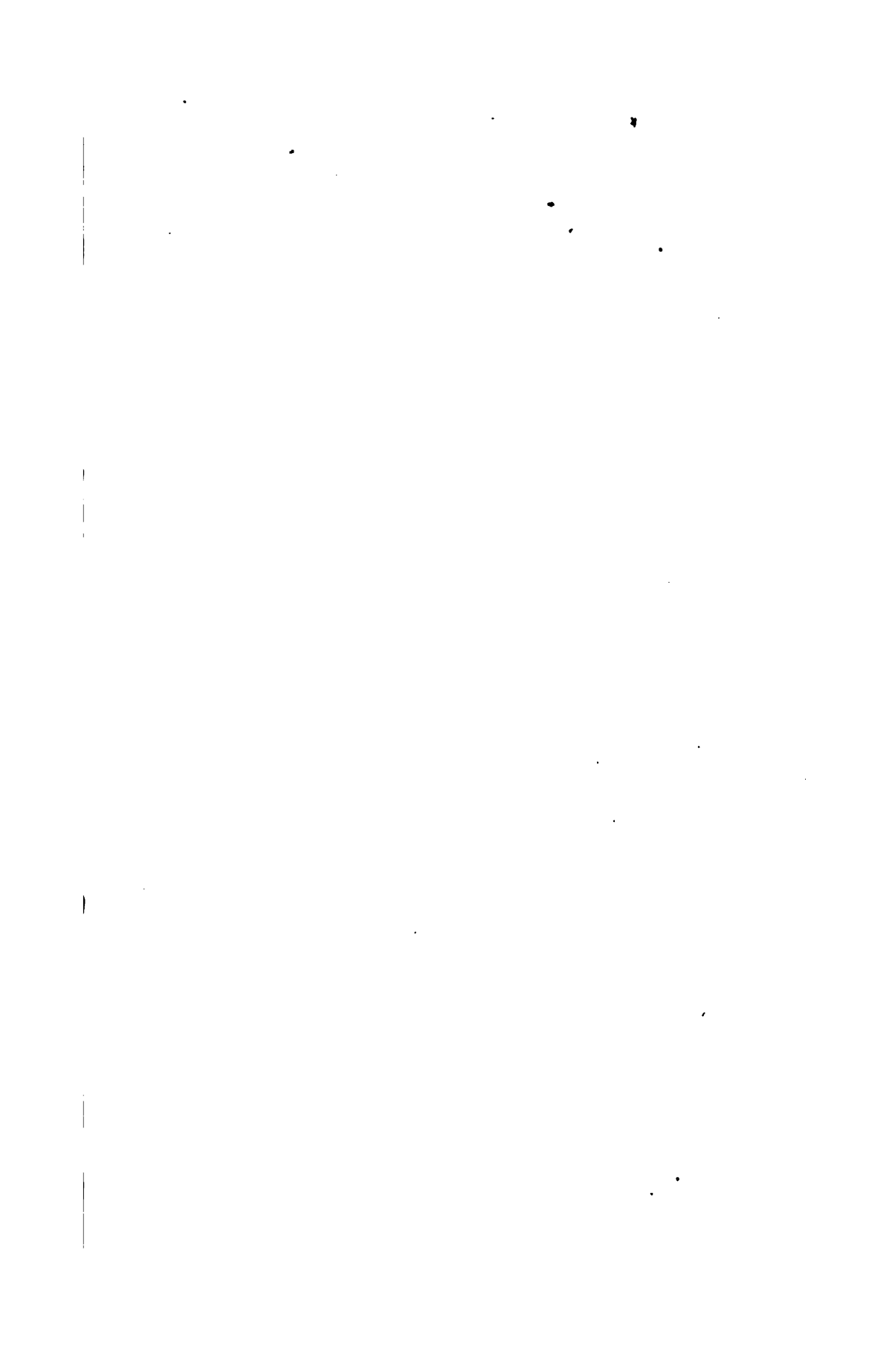
The *Ageratum*, as an autumn and winter flowering plant, is grown here in great abundance. We take fifty plants of *Ageratum* from the "bedding stuff," and plant them three feet apart in a convenient place in the kitchen garden. The shoots are topped and thinned all the summer, the last stopping being about the end of August. They are lifted as late as possible to escape frost, with large balls, and potted. When a plant thus treated is in full flower, it presents to the eye a sheet of blue or lavender blossom, two feet across. It is pretty in nosegays.

The *Cineraria* is beautiful at all seasons, but it is most needed in autumn and winter. It is propagated by seed, and dividing the roots. For spring flowering, dividing the roots in autumn answers very well; but for autumn and winter decoration, seed is necessary. We have to sow it in the month of February at Manchester, about London the month of April is soon enough. The *Cineraria* does not thrive when exposed to the direct rays of the sun; it is therefore necessary to grow it in summer on the north side of a wall or hedge."
—*Gardener's Chronicle*.

Cuphea Platycentra is another charming bloomer. Sow seed in June, pot off singly as soon as fit, place them in an open frame, stop the buds when six to nine inches high; they will push numerous side shoots, and form bushy plants, which will bloom from October throughout winter, and then be fine for planting in the open beds in May. Their pretty tube-shaped flowers of scarlet, black, and white top, borne in profusion, have a very cheerful appearance.

Several of the *Salvias*, too, make fine objects. Young plants raised in May, having shoot stopped, to make them dwarf and bushy during summer, will bloom throughout winter and spring.

Deutzia Gracilis forms a neat bushy plant, and is covered with its racemes of pearl-white flowers, blooms all winter and spring. So does the yellow blooming *Jasminum Nudiflorum*. The yellow *Coronillas*, and *Cylisuses* also, form pretty contrasts with the above scarlet, blue, rose, white, &c. All these I have had in bloom since last October.—*Flora, Middlesex*.





1. *Black Diamond.*
2. *Justice Shallow.*



ILLUSTRATIONS.

CARNATION.—No. 1. HAYNES'S BLACK DIAMOND. No. 2. MAY'S JUSTICE SHALLOW.

"Let you admired Carnation own
Not all was meant for raiment, or for food;
Not all for needful use alone;
There, while the seeds of future blossoms dwell,
'Tis colour'd for the sight, perfumed to please the smell."

DIANTHUS CARYOPHYLLUS, FLORA-PLENO.—"The double-flowered Carnation." The generic name "*Dianthus*" is derived from *dios*, divine; and *anthus*, flower; "Divine-Flower," or, as some ancient writers term it, "Jove's Flower." It is now made the emblem of "lively and pure affection."

The Carnation was in high estimation in Queen Elizabeth's time, and was often celebrated by the poets of her day. Spencer, who was remarkable for his care in retaining the old manner of spelling, calls them **CORONATIONS**, probably because they were specially used on those occasions; and from hence the name "Carnation" is a corruption. Some writers assert it was called "Carnation" from *carnea*, a *flesh-colour* being the colour of the original flower:

"Carnation'd like a sleeping infant's cheek."—BYRON.

The Romans [seldom sat down at their meals without wearing chaplets of flowers; and it is recorded, that as early as the time of Cæsar Augustus (upwards of eighteen hundred years ago), Carnations were held by them in high esteem for those purposes. Whether the flowers were single only, or double ones had then been produced, we

have not any account thereof. We find, however, that in England, a little more than five hundred years back, there were a considerable number of double ones; and the florists of that day considered them plants of great value, and there were forty-nine named varieties in cultivation. In 1597, Gerard states, "I have a Carnation with *yellow* flowers." But during the civil wars in this country, in the latter part of the reign of Charles I., and of the Commonwealth, these flowers seem to have been nearly lost in England; as Mr. John Rea remarks, in his "Flora" of 1665, "We had formerly many good kinds of Carnations, but few are now to be found." The Dutch then commenced the cultivation of the Carnation; and from thence, during the reign of Charles II., as Rea observes, "Of these Dutch flowers, I have known more than a hundred distinct varieties, by names, all of them fair, large, and double flowers." In a few years after, he enumerates "three hundred and sixty good sorts, all high in his estimation;" we give his own statement:

"For various colours Tulips most excel,
And some Anemonies do please as well;
Ranunculus in richest scarlet shine,
And Bear's Ears (Auriculas) may these in beautie joyn:
But yet, if 'ask and have' were in my power,
Next to the Rose, give me the Gilliflower."

The Carnation was then commonly called "Gilliflower," a corruption of "July-flower," in allusion to the usual time of its blooming.

The florists of France grow Carnations to an immense extent, for the purpose of supplying the markets with cut flowers. The varieties in general are, however, what the Carnation growers of our own country would reject, as being of very inferior shape. The modern florists of Great Britain have paid great attention to improve the form, and yearly there has been an advance both in the shape and better colouring, marking, &c.; so that we now stand very pre-eminently above all other countries for a beauty and perfection in Carnations and Picotees, as well as growing them much superior in all respects to any we have seen elsewhere.

Carnations, as well as Picotees, are divided into several classes; and although well understood by florists and other exhibitors of these flowers, there may be some of our readers who do not know the particular definitions which are indicated by the *colours* of the flowers. Carnations form two principal classes; viz., *Bizarres* and *Flakes*. The *BIZARRES* are so named from the French word, which signifies "odd, or fantastical;" these have *not less* than *three colours* in each petal of the flower.

Scarlet Bizarres; each petal being *striped* with two colours, "*scarlet* and a *dark maroon*," on a *white* ground, varying in intensity in different sorts.

Crimson Bizarres; the *stripes* also consisting of two colours, but approaching in their tint more to a *rose* colour and *purple*. In this class there is a subdivision, styled "*pink* and *purple Bizarres*," which are lighter and more lively in their shades.

FLAKES are so called from having two colours only (more properly

one colour) upon the white ground of every petal, and their flaky stripes extending quite through the length of the petal. Their colours are scarlet, rose or pink, and purple of various hues, and termed Scarlet Flakes, Rose Flakes, Pink Flakes, and Purple Flakes.

PICOTEE is from the French *Piquettée*, "pricked or spotted." This term was properly applied, no doubt, to a class of flowers having a white or light ground, being dotted, speckled, &c., with red, rose, purple, &c. Some of our Picotees of the open borders, fifty years ago, were of this character. Modern florists, of our own country, however, have, by hybridizing the flowers, and raising successive seedlings, got rid of the *spotting*, and have obtained flowers having a well-defined coloured edging and a clear white or light ground. Such flowers now constitute our *Picotee* class, though the name is inappropriate as descriptive of the disposition of the colours. We have subdivisions in light-edged and heavy-edged, and of the colour of the edging, as red-edged, rose-edged, &c.

The term *Picotee* is quite appropriate to the general class of Carnation flowers seen in the French markets, a white or flesh-coloured ground, being dotted and speckled enough, with jagged edged petals additionally.

The two flowers we now figure are of very first rate excellence, both in form and marking, deserving a place in every collection.

BLACK DIAMOND is a crimson Bizarre, and Justice Shallow a Scarlet Flake. Several articles on the culture of Carnations, &c., by first-rate exhibitors, are given in previous Numbers of this Magazine.

NOTES ON NEW OR RARE PLANTS.

DIPLADENIA FLAVA.—Mr. Purdie sent this very handsome flowering species from New Grenada to the Royal Gardens of Kew. It is a stove shrubby climber, blooming freely; the flowers are produced in terminal peduncles, of from four to six blossoms in each, of a rich yellow colour. Each flower is about two inches and a half across. It is a charming addition to this pretty flowering genus, contrasting beautifully with the flowers of the other species, and being nearly as large as those of the *Allamanda*; they are very ornamental. It merits a place in every plant stove.—Figured in *Bot. Mag.*, 4702.

IMPATIENS HOOKERIANA, Hooker's Balsam.—Mr. Thwaites sent seeds of this pretty species from Ceylon to the Royal Gardens of Kew, where plants bloomed last season in the stove. It grows from two to three feet high, erect, succulent, branching. The flowers are produced in subterminal axillary peduncles, each having from four to six blossoms, white, with the centre richly marked with deep blood-coloured veins. Each flower is about two inches and a half across.—Figured in *Bot. Mag.*, 4704.

GALEANDRA BAUERI, FLORIBUS LUTEUS.—A stove orchid (in the collection at Syon Gardens) from South America. The flowers are produced in drooping racemes, each having from ten to fourteen blossoms.

Sepals and petals, a full yellow; lip, funnel-shaped, long, of a deep yellow, dotted with blood-coloured lines. Very handsome. Figured in *Bot. Mag.*, 4701.

GYMNOSTACHYUM CEYLANICUM.—Mr. Thwaites sent seeds of it from Ceylon to the Royal Gardens of Kew. The roots are slender and *creeping*, throwing out fibres. The stems are short, bearing from four to six pairs of opposite leaves, which spread out horizontally, oval, nearly four inches long; of a deep green with milk-white broad lines along and on each side of the midrib and lateral veins, rendering its whole appearance beautifully interesting. It has somewhat the resemblance of the *Achimenes picta*, but the distinct rib and veins are more striking. The flower spike is from six inches to a foot long. The blossoms are small, white, tipped with green and yellow, tube-shaped, nearly an inch long, but very narrow. It blooms freely during winter in the stove.—Figured in *Bot. Mag.*, 4706.

HELIOTROPIMUM, Madame Bouchardat.—A fine hybrid between *H. Souvenir de Liege* and *H. Voltaireanum*. It is of vigorous habit, free, blooming, and the heads of flowers are *very large*. The blossoms are of a bright violet, with a green eye encircled with a pretty yellow ring. It is considered the handsomest of all *Heliotropes*, and ought to be in every greenhouse, and, in summer, in every flower-garden.

HELIOTROPIMUM, Louis Chaix—Another fine hybrid of vigorous habit, raised between *Souvenir de Liege* and *Pericles*. The heads of flowers are large, blossoms of a pretty lilac, with a pure white centre, having a very beautiful appearance. It is a charming variety well-meriting a place in every collection of these universally esteemed plants.

TROPÆOLUM, Triomphe de Gand.—A seedling from *T. Lobbianum*, which was raised by Mr. Van Houtte. The flowers are larger than the parent plant produces, and of a more brilliant orange-scarlet colour. It is an admirable plant for blooming “in profusion” nearly all the year, but especially during winter. Plants may now be had cheap, and it deserves a place in every plant-house.

TROPÆOLUM HOCKERIANUM.—This is another very pretty variety; the flowers are yellow, having each petal handsomely spotted with red. It also blooms freely during winter.

VERONICA ANDERSONII.—This variety from *V. speciosa* and *V. lendlayana* is a most charming shrubby plant, of medium size, and a profuse bloomer. Its pretty rosy-lavender coloured spikes of flower are at all seasons pretty, but particularly so throughout winter. It can be procured cheap, and is well worth possessing.

BEGONIA.—A very handsome seedling raised between *B. manicata* and *B. cinnabarina* has bloomed beautifully in the Horticultural Society's Garden. The flowers are of a bright-red colour. It is a charming variety.

CALCEOLARIA VIOLACEA.—It is of the shrubby section, branching freely, and forms a nice bushy plant, blooming in *profusion*. The flowers are of a pretty *blue*, and the lower portion of the flower has a large patch of yellow in the centre of the front, spotted with red. Each blossom is about three parts of an inch across. It is a native of Chili, from

whence it was obtained by M. Van Houtte. It is a valuable acquisition.

PETUNIA, PRINCE CAMILLE DE ROHAN.—A very striking variety raised in M. Van Houtte's establishment. Each flower is about three inches across, of a reddish violet colour, beautifully netted with dark veining, and having an edging a quarter of an inch broad, of a rich green. It is singularly handsome.

RHODODENDRON, THE STANDARD OF FLANDERS.—This magnificent variety is a seedling from *R. Cataubiense*, impregnated by *R. ponticum Pardoloton*. It is of a vigorous habit, and its heads of blossoms are very large, nine or more inches across. Each blossom is three inches and a half across the front. The principal ground is of a rosy violet, shading off to a light centre. The upper section of the flower has a very large blotch of rich fiery-red, most handsomely and numerously spotted with black dots. It is unrivalled in its class.—Figured in *V. Houtte's Flora*.

COLLECTIA SERRATIFOLIA.—A shrubby plant, from Peru, having bright-green branches like the broom, with oval-shaped leaves about the size of a *Phillyrea*. The flowers are produced in May and June, *small*, of a greenish-white, very fragrant. It grows, freely trained, against the open wall in the Chiswick Garden. Being so remarkably sweet-scented, it is valuable, either grown in the open ground, or in pots.

ABUTILON PORCHERE.—The flowers are of a deep orange-red, beautifully netted with purple.

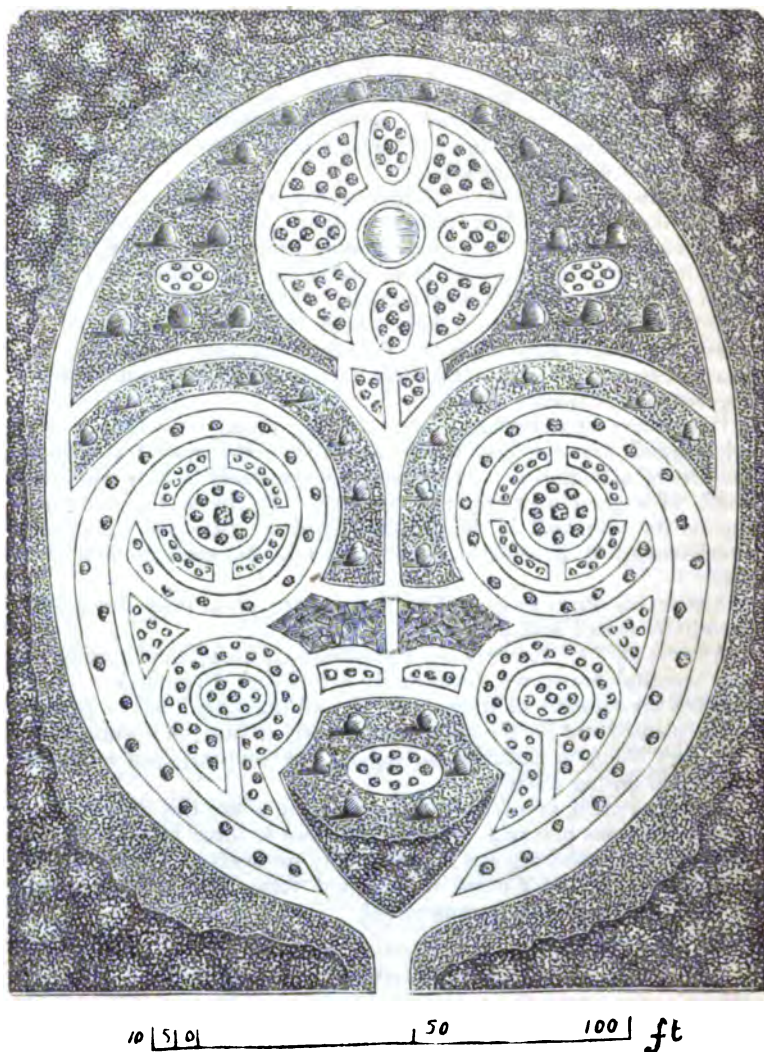
ABUTILON VAN HOUTTEI.—The ground colour of the blossoms are of a beautiful brown-red, handsomely netted with deep-purple. Both varieties are valuable additions; and, like all the other kinds we possess, being planted out in the open ground early in May, in a warm situation, they bloom in profusion throughout the summer, then require to be housed during winter.

COMACLINIUM AURANTIACUM.—We again notice this fine plant. It is an herbaceous perennial, growing from two to three feet high in the open ground, branching and blooming very profusely. The flowers are very similar to the *Zinnias* in size and form, of a brilliant orange colour. It is exceedingly ornamental.

PLANS OF FLOWER-GARDENS.—By T. RUTGER, Esq.

No. 4.

At the entrance of the above design for a flower-garden, stands a thickly-planted shrubbery, meant to prevent at the first approach a full view of the garden. Proceeding on either side round the shrubbery, you come to a lawn, with choice shrubs on the grass, and a clump in the centre. On the wing at either side, the scrolls as represented are intended for Roses and Dahlias, the latter to succeed the former



when out of bloom. The interior compartments are for flowers, some for masses, or otherwise, as taste may direct. On each side, near the commencement of the centre walk, a mass of arched rock-work is represented. The compartments for grass are indicated, as seen by shrubs placed thereon. In the detached circular compartment there is a pond in the centre, intended for gold and silver fish, and for a fountain, should water be convenient.

REMARKS ON THE ROSE.

BY MR. PETER MACKENZIE, OF WEST PLEAN, NORTH BRITAIN.

THE kitchen gardener tries often to make his ground do double duty, by taking what is sometimes called a stolen crop. Perhaps the same system may be introduced to a greater extent in the flower-garden than is commonly done, and may be the means of keeping up the interest of that delightful spot, until the season is far advanced, by prolonging the season of flowers.

There appears to be no end to the increasing number of splendid varieties of the much esteemed family of Roses; and as they find admittance to the flower-garden and pleasure-ground in the shape of standards, such plants may be made to protect others without hurting their beauty or offending their pride. The roses of our day appear to want that haughty spirit which others are represented to have had long ago, for we are told, that—

“ Within the garden’s peaceful scene
 Appear’d two lovely foes,
 Aspiring to the rank of queen,
 The Lily and the Rose.
 The Rose soon redder’d into rage,
 And swelling with disdain,
 Appeal’d to many a poet’s page
 To prove her right to reign.”

We will not seek to dispute “her right to reign,” but point out how beneficial she may be in protecting the flowers and other buds from the biting frost of our country, when placed under the sway of her sceptre.

We are told that there are three causes of beauty in a rose-tree; namely, shape, foliage, and flowers. Shape, to a certain degree, we artificially gain; foliage and flowers must depend upon the sort; the foliage is the more permanent, the flower the more striking. Planting out, then, must depend entirely upon the effect desired and the taste of the party planting, as to variety of foliage, height, flower, its colour, and continuity. A tree with rambling shoots suits one place, and with a cauliflower head another; but where taste requires them to be planted in clumps it may be done in a variety of ways; they may be made to look like a sloping bank when finished, by planting different heights in succession. There are different opinions respecting the proper height of standards, some recommending three or four feet standards as being most in keeping with the heads they carry, and being nearer the ground, have a very natural and steady effect, and in confined places they are unquestionably best in their appearance; but if the trees are to be distant from the eye, or the shrubbery or walk be large and increasing in distance, a four or five feet standard is certainly more distinguishable, and has a much greater effect. But without entering into every particular about standard roses, we generally find that there is room for other plants to grow beneath them of more humble dimensions, and thrive well too. Although we have roses that will flower out of doors until winter approaches, yet many of them only flower for a limited

period during what may be called the "rosy time of the year;" yet the blow of flowers may be kept up in the same piece of ground until late in the season, by taking advantage of the foliage of the rose-trees.

Plants that are mostly used for bedding out in flower-gardens are somewhat tender, and in exposed places are nearly cut up when the first frost comes; but where they receive such protection as the leafy leads of tree-roses, they will continue blooming for a month or six weeks longer than where there is no such shelter. Flowers of greenhouse plants in such places may be gathered in November, while those of a similar nature, but without such protection, will be found dead, or carried off and wheeled to the dunghill.

Towards the close of autumn, in some seasons, there are many places that have the appearance as if the race of flowers had been swept with the besom of destruction from the face of the earth; it is pleasant to find some situations that may be compared—

" To a bower of Arcadian sweets,
Where Flora is still in her prime,
A fortress to which she retreats
From the cruel assaults of the clime.
While earth wears a mantle of snow,
These flowers are as fresh and as gay
As the fairest and sweetest that blow
On the beautiful bosom of May."

AZALEA INDICA, WITH A HINT ON THE CULTURE, AND DESCRIPTION OF TWELVE FINE VARIETIES.

BY MR. J. BURLEY.

THESE handsome greenhouse, partly deciduous shrubs, are, I presume, to be found in winter in bloom in most of the conservatories and greenhouses of the readers of this Magazine. No doubt most of your readers have seen the splendid and gorgeous effect they have when grown well, and attain a large size. For instance, what can equal the effect they produce at our leading London floral shows, where plants may be seen as high as from four to five feet, or even more, with one mass of bloom? Perhaps but very few of your readers would have accommodation to grow them to that size; but no doubt most of them can manage to grow them of moderate size; and even thus they will, when in bloom, form one of the principal winter and early spring gaieties indoors. I shall here give directions how they may be grown, and the soil required for them.

Soil.—Azaleas have been found to succeed when grown in turfy peat; that best known as *Wimbledon* suits them well, with a liberal addition of silver sand. For young plants the peat should be well broken up, and used (in potting) with the fibre, and with plenty of silver sand; and as the plants increase in size, the peat should be broken in larger pieces, increasing the size of them as the plants progress in growth, and require re-potting. In potting them, be careful to always use *clean pots* and liberal drainage; this is "very essential" to secure success.

Let the soil be pressed moderately tight, and leave half an inch clear inside the rim of the pot, to allow plenty of water to be given them when required. The best time to pot them is the month of August.

But few remarks are necessary on their treatment ; but the following will be found useful :

Azaleas like to be kept in a warm house, with a temperature in summer of from 65° to 75° Fahrenheit, and in winter, 50° to 55° will do,—except when wanted to bloom them early, when they may be placed in still greater heat. After blooming they will require to be kept at the above temperatures, from 65° to 75°, in order to encourage the setting of the buds for the ensuing year's flowers ; and let them be well syringed (particularly the under-side of the leaves) "every day," as the red spider is apt to attack them when kept in a hot place. After the flower-buds are set, air may be admitted freely ; and in summer keep them "always moist" (not soddened), and shade them from the mid-day sun. In winter, or after potting, they sometimes lose a portion of their foliage ; when this is the case, withhold giving water, except just enough to keep the soil moist. Those whose leaves drop, should be arranged on a stage or platform "by themselves," for when mixed with other plants they give the whole an untidy appearance ; but when placed by themselves, they may be easily cleaned and be duly attended to.

ALBA LUTESCENS.—Fine white, beautifully spotted with red, and having a tinge of yellow.

AURORA.—Bright scarlet, large fine flower.

BEAUTY OF REIGATE.—White, distinctly striped with rosy carmine.

CHELONH.—Beautiful pink, with extra good qualities.

DUKE OF DEVONSHIRE.—Splendid scarlet, free bloomer.

EMPEROR.—Fiery scarlet, quite distinct.

EXQUISITE.—Violet pink, spotted with red, and having a distinct white edging. Good form and free bloomer.

GLORY OF SUNNING HILL.—A very fine large double pink flower, rich and fine.

CONQUEROR.—Large orange carmine, a most handsome variety, free bloomer.

MRS. FRY.—Bright carmine, free bloomer, and extra size flower.

PERRYANA.—Splendid dark orange-scarlet, fine form.

SYMMETRY.—Salmon-pink, richly spotted with crimson, fine flower.

VESTA.—The finest white, fine form and profuse flower.

VITTATA.—White, spotted and striped with violet, fine flower.

Young plants of the above may be purchased from 2s. 6d. to 7s. 6d. each.

CULTURE OF THE TORENIA ASIATICA.

BY MR. F. THORNE, OF SHUCKBOROUGH PARK.

THIS very pretty flowering plant is a native of the East Indies, and was introduced into this country in 1823. It derives its name from the Rev. Olof Toren, a Swedish botanist. It is a valuable stove trailing-

plant and blooms all the year, when it is properly treated, and it ought to be in every collection of stove plants. During the growing season it delights in a high and moist temperature and partially shaded from the summer's sun: they succeed well under the shade of vines. When in flower the plants require a *drier situation*, to preserve the blooms and foliage in a perfect state. Cuttings are struck about the middle of August; they root freely in leaf mould and sand, plunged to the rim in a medium bottom heat. During autumn and winter keep them in almost a dormant state, giving only just enough water to preserve life. Although cuttings when well rooted are very apt to damp off during the dull months of winter, place them in a cool and dry part of the stove and keep them there till February, then pot them into sixty-sized pots and plunge them to the rim, where there is *bottom* heat at seventy degrees. By the end of March they will require a re-potting, and at this period I generally put *three plants* into a thirteen-inch pot with a liberal drainage, using a compost of equal parts of sandy peat and well-rotted cow-dung, with leaf mould and a few bits of charcoal; after which I allow the shoots to grow naturally for some few weeks, till they are about two feet in length, as it greatly promotes growth; then those intended to be trained are tied up to vine trellaces of any shape, according to the taste of the operator. A plant or two in wire baskets suspended from the roof have a very pretty effect, and where there is convenience, plant it on a *level surface*, and it will form a very beautiful bed and will be admired by all who see it. When thoroughly rooted, these plants require "daily attention" to watering, and on this success mostly depends. I have often seen plants with the foliage of a brown appearance and the flowers small: these defects, I believe, are caused for the want of more nourishment at the roots. Water cautiously, once a week, with weak liquid manure, which greatly promotes health and vigour both to foliage and blossoms. One-year old plants are destroyed, and a succession is provided by cuttings struck in August, which become well established before winter. The profusion of beautiful flowers amply repays for any attention.

DEUTZIA GRACILIS.

THIS is certainly one of the loveliest shrubby plants that we possess. It is a native of Japan, and forms a neat-growing little shrub. It is a most profuse bloomer, so much so as to be literally loaded with its racemes of pure white blossoms. The specimen we give, in the accompanying engraving, of its mass of flowers, is a correct representation of its general blooming. It is easy of cultivation—flourishing in the greenhouse, pit-frame, or sitting-room. It is also an admirable plant for forcing, and can be had in bloom throughout winter. In fact, by having plants kept in a cool situation, and introducing some successively into the forcing-house, greenhouse, &c., it may be had in bloom all the year. It ought to be grown by every lover of a really pretty flowering plant, and having the convenience to do so. Plants of it have been



successfully grown in the open ground in Devonshire, but it is only in warm and dry situations it will be likely to do so.

THE GENUS DIPLADENIA.

BY MR. J. R. TANTON.

IN our climate the character of this tribe of plants renders the adoption of "pot culture" necessary, that they may be "matured" in glazed erections, and kept portable for the greater convenience in their

management. They are, notwithstanding, sufficiently hardy to bear with impunity a considerable amount of cold when in a "dormant" state; and to grow this tribe of plants successfully, a comparatively high temperature is decidedly necessary. Much of the success depends upon the marked season of rest, for it is not merely the periodical rest of winter these plants require; they have, like animals, their diurnal repose; therefore night and its accompanying refreshment is as necessary to them as it is to ourselves, for in all Nature the temperature of night falls lower than that of day; therefore at that time the perspiration of plants is stopped, no digestion of food takes place, and instead of decomposing carbonic acid by the extraction of oxygen, they part with carbonic acid, and rob the air of oxygen, thus deteriorating the air at night, but not to the same extent as they purify it during the day; therefore, to meet with the wished-for success, the temperature of night should be kept lower than is usually practised among plant-growers, and a temperature varying from 85 to 90 degrees during the day. When these plants are in "active growth," they also, at this season, require a very humid atmosphere, or the leaves are soon disfigured by the innumerable punctures of a host of insects, which are certain to attack an "unhealthy plant," and thence spread all over those that may be near. This genus can be propagated in two ways:—The first, and most successful, way which I have always practised, is by taking the small tubercles of the roots, and potting them in the same way as young plants, taking care to keep the crown of the tubercle just above the soil, and plunging the pots in a moderate hot-bed, covering them with a hand or bell-glass till they push; after that period the glass may be removed. The second way of propagation is by taking off, as early in the season as it is possible to procure the young wood of sufficient length, pieces having three or four joints, such being the best. They must be cut quite from *their origin* so as to retain a small portion of the parent stem at the base of the cutting, or, as it is technically called, "a heel;" these being squared off with a sharp knife, and the lower leaves removed, the cutting is ready to be inserted in the pot, which should be filled to within an inch of the rim with very sandy peat and silver sand mixed thoroughly, filling up the remaining space with pure sand; in this the cuttings are to be placed at a distance of about an inch apart, and when the pot is filled, dip it carefully in a vessel of water till the water is evenly over the surface of the sand; then draw the pot out quickly, and the passage of the water downwards draws the sand so tightly around the cuttings that the air is quite excluded; a point of the utmost consequence in all kinds of propagation. Cover them with a bell-glass, and plunge the pot to its rim in a steady bottom heat of 80 degrees, taking care to shade them from the strong sun-light, and to supply them moderately with water, till, in three or four weeks, they will have protruded roots sufficient to warrant their removal into separate pots. The treatment through the second stage very closely resembles that of mere cuttings; they should be potted in sandy peat and good decayed leaf mould, adding a sufficient quantity of silver sand to keep the whole porous. They should at this period be kept in a close frame with a temperature of 70 to 75 degrees, maintain-

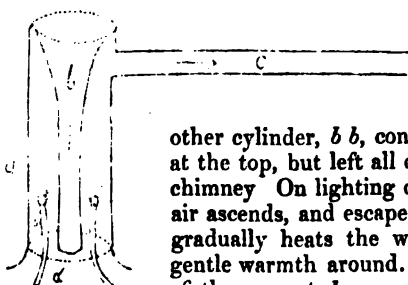
ing about them a close humid atmosphere; but the liberal application of water, and shading the glass to reduce the heat, rather than by the admission of the external air, as the exhaustion caused by the influx of a dry atmosphere would be more than the plants, in their present delicate condition, could bear. If the first part of the season has been taken advantage of to proceed thus far, the young plants' future progress will be rapid, and by the end of summer they will have thoroughly established themselves, and by a few weeks' exposure to a liberal aëration, will become ripened, and in a fit state for winter. This is perhaps the most trying period in the whole history of the plants; they will require to be kept just cool and dry enough to prevent any attempt at renewed growth, and yet so warm as to be in full vigour, and in a condition to start with energy on the first application of the usual stimulants. The best period for renewing the action will be the middle of January; repot them, and again place them in a brisk heat, about the same as that in which the cuttings were stuck; here they will grow with rapidity, and great care must be taken to prevent the young shoots becoming massed together; for if they are suffered to do so, it will cause a deal of trouble, besides the chance of twisting the shoots, which at this period are very tender. They should, therefore, be looked to every day, letting them ramble where they like till the end of March, when repotting will be again necessary. After this operation, the trellis most suitable for these plants should be placed to them, carefully training the young shoots at equal distances from each other. The trellis I have found most suitable for this tribe of trailers is a "conical-shaped;" it is the best suited for displaying their magnificent flowers. The plants may then be removed to the stove; where bottom heat can again be supplied, with a little more elevated humid atmosphere. About the beginning of June, the plants will begin to show bloom; and their fine flowers will amply repay the cultivator for all attention given.

(To be continued.)

ON HEATING A SMALL GREENHOUSE BY GAS.

BY L. J. FLEMING, ESQ.

I HAVE had a stove constructed so as to be heated by gas, which has now been in operation nearly two months, and it answers admirably. The principle is similar to the one described in the "Cabinet," by Mr. Cathill, but I think improved. On page 86 I give a sketch. I have two burners in it, but I never have occasion to use more than one. They are but common gas-burners, and keep the stove, or rather greenhouse, which is 15 feet square, from 8 to 10 degrees above outward temperature. There is never the least escape of combusted air, and if it should make the air inside a little dry, it is easy to remedy that by putting a pan containing water on the stove. Another important item is, it can be made at the cost of a few shillings, and may burn a great length of time without attention.



I think your readers will be able to understand its construction from the sketch. It is simply a cylinder, *a a*, having another cylinder, *b b*, coned, and firmly united to *a a*, at the top, but left all open at the bottom; *c* is the chimney. On lighting one of the burners the heated air ascends, and escapes through the chimney. It gradually heats the whole apparatus, and casts a gentle warmth around. The air also enters inside of the cone at *d*, passes up, becomes gently heated and goes off, keeping up a continual circulation. This may be easily felt by putting your hand down the inside of the cone, when it will be found that the air is quite warm at the top, and gradually becomes cooler toward the bottom. It perfectly answers the purpose it is intended for, that is, to keep a small greenhouse, in which to grow Geraniums, Fuchsias, Calceolarias, and plants of that description, at a proper temperature, say from 42 to 50 degrees Fahr. In cases where a high temperature is required, I do not think it is suitable; indeed, I think it would not be possible, except by an immense consumption of gas, to raise the temperature very high; but in such a case as my own, an amateur wishing to keep his plants over winter in a healthy state, at very little trouble and expense, it is, I think, admirably adapted.

MISCELLANEOUS SECTION.

PETUNIA (*Nierembergia*) *intermedia*. — When this most lovely, little, bushy, handsome flowering plant was first introduced into Great Britain, it was held in high esteem. The mismanagement of cultivators has tended to its disparagement; but when properly treated, it grows freely and blooms profusely from April to November, in the greenhouse or pit-frame. In warm situations, it succeeds well in the open ground, planting it out in May, and repotting at the end of summer. Its medium-sized (*Petunia*) flowers of crimson, velvet, and yellow colours, render it exceedingly pretty. The following excellent particulars, by Alpha, relative to its successful management, have been given in the *Gardeners' Chronicle*; and we hope many of our readers will be induced to grow this charming plant:

“Cuttings should be selected from firm pieces of young wood, such as have not begun to produce flowers, planted in light sandy soil, covered with a bell-glass, and placed for a fortnight in a shady part of a cold frame, and then removed where the temperature may be from sixty to seventy degrees; thus treated, they will be sufficiently rooted for potting off in about a month or five weeks. This *petunia* is difficult to winter in a soft state, and as some time is required to get up nice plants with well-matured wood, the cuttings should be got in before the end of June; and where a stock for outdoor planting is required, it will

be advisable to grow a few plants to furnish cuttings at the proper season. Pot singly in four-inch pots, as soon as the cuttings are sufficiently rooted, using light rich sandy soil, and place them in a close moist frame until they have made some progress; afterwards, gradually accustom to a free circulation of air, and full exposure to the sun's rays, in order to get the wood well ripened. An airy situation, free from damp, and where the temperature may average about forty degrees, will suit during winter. Those intended for planting out should be hardened during spring, by free exposure to air, on mild days; but they had better be kept growing slowly, and if they can be shifted into five-inch pots, this will assist in keeping them healthy and in having good plants at turning-out time, which will produce immediate effect. A warm sheltered situation, with light rich sandy soil and thorough drainage, is indispensable.

"The plants intended to be grown in pots should be nice compact specimens, in five-inch pots, before winter, and should be induced to start into free growth as early in spring as circumstances will permit. About the middle or end of February will be a proper time for placing the plants in a temperature of from fifty to sixty degrees, keeping them near the glass, and admitting air freely on mild days. As soon as they are moderately rooted, shift into pots one or two sizes larger than those they occupy, according to the vigour of the plants. Very fine healthy specimens may be allowed eight-inch pots, while a size smaller will be more suitable for such as are not so promising. Stop rather closely, and tie out the principal shoots; maintain a moist atmosphere, but water carefully till they appear to have taken to the fresh soil, especially any that were pot bound. Keep them growing as freely during the spring as can be done without inducing weakly growth. Beginners will probably experience considerable difficulty in getting some of their intended specimens to make a good start; and they will act wisely in being prepared with a few extra plants, which will enable them to throw failures away, without inconvenience; for once get this plant into bad health, and it is not easily recovered. If all goes on well, they will be handsome specimens, covered with flowers, by the middle of May, and should be placed in the greenhouse when its usual occupants are placed out of doors. Any of the specimens that have filled their pots well with roots, will be benefited by a shift, and all by occasional waterings with clear weak manure water. When they have done flowering, which, if they are properly treated, will not be until well into the autumn, they may be thrown to the rubbish-heap; as young plants occupy less space during winter, and generally make better specimens than old ones kept after flowering.

"The best soil for the pot culture of this plant is turfy sandy loam and fibrous peat, in about equal proportions, which should be broken up into small pieces, rejecting all that is not full of fibre. To four parts of this, add one of sharp silver-sand, and one of clean small potsherds. A small quantity of thoroughly decayed cow-dung, passed through a fine sieve, to free it from worms, intimately mixed with the compost, will be useful to healthy plants, especially in the final shift."

NEW PELARGONIUMS.—Nearly all our large flowered section of show

Pelargoniums have blossoms which have a dark *blotch* or *spot* upon *each* of the two upper petals, the lower ones being without. We have, however, a few of this large flowered class whose blossoms have a dark blotch or spot upon *each* of the *five* petals, as Hoyle's Nonsuch, Ocellatum, and two or three others, which "*five spotted*" have recently been distinguished as "The Large-flowered Fancies;" and in consequence of their very distinctive character from the other flowers, those ought to form a separate section, and be exhibited as such. During the last four or five seasons we have had additions of these five spotted kinds by the seedlings of Mr. Hoyle and Mr. Foster, so that we possess sufficient varieties to form a collection for exhibiting. Mr. Mieliez, florist, of Lille, in France, has obtained some of this handsome section of flowers, and gave 250*l.* for twenty varieties. Coloured figures of thirteen he has sent us, and plants of ten of the varieties are offered for sale. They are especially beautiful, and worth a place in every collection. The following are the kinds sent us:

ADELE ODIER.—Upper petals bright crimson, with a light margin, and a large dark blotch. Lower, pale flesh, with a dark spot at the middle.

MADAME DE LAMORICIERE.—A beautiful pink, and each petal has a striking dark spot.

MADAME EUGENE CAVAINAC.—A pure white ground; upper petals have a dark blotch, surrounded with fiery crimson, and a white margin. Lower, a scarlet spot at the middle of each.

COLONEL FOISSY.—Bright rose ground; upper petals a large dark blotch, edged with rich crimson. Lower, a large dark spot on each, and the petals beautifully netted with scarlet.

GENERAL EUGENE CAVAINAC.—Rosy-lilac ground; upper petals a large dark blotch, surrounded with rich crimson and a light margin. Lower, each having a large dark spot, and slightly streaked.

TRIOMPHE DE LA TOUR.—A rosy-violet ground; upper petals a large dark blotch, margined with deep crimson. Lower, each a dark spot, and the petals beautifully netted with scarlet.

CULTURE OF THE ROSE IN POTS FOR FORCING OR OTHERWISE.—As to the pruning of roses in general, we see them left with new wood from five to ten inches in length, and this is called pruning; what a delusion! When you are about pruning, be not afraid of using your knife; two buds are enough to leave on the last year's wood, as a general rule. If the plant or plants require more to form a neat head, cut accordingly, to make it as handsome as circumstances will admit of; but otherwise never think of leaving more than one or two buds. If the plants intended for forcing have had proper treatment through the summer, they will have been, of course, bedded in a convenient place in old tan or fine ashes; either will do, as the rose does not like the hot rays of the sun to their roots; in the summer, therefore, they should be plunged whether for forcing or otherwise.

ROOT-PRUNING.—When you are about potting the roses, be sure to see well to the root-pruning, which, by some people, is not even thought of, much less done. Cut away all damaged roots, and if a wound is perceptible, or be cankered, cut it clean away; it is far better to have

only two clean roots than a dozen bruised ones. If you wish to bud roses for pot culture, let it be done as close as possible to the stock, as it makes a much neater-looking plant; it also does away with that unsightly appearance of so many sticks and ties, which are objectionable.

PROPAGATING.—If you wish to have a good stock of roses, have some pots, No. 32's, in readiness, cleaned and filled with the proper soil suitable for the rose, then select the best sorts you have at hand, take care they are good *free* bloomers, then insert in each pot six cuttings, one joint under-ground, two above, and place them in a cool situation, plunged to the rim, and attend to the watering and keeping them clean. This operation ought to take place in the early part of October.

SOIL.—The best suited for the rose is good loam, two-thirds, and the other in equal parts of well decomposed dung and sharp grit; the latter may appear to some people useless, but I find it a great acquisition; it causes a *quicker* growth, and much promotes the certain rooting of cuttings.

The following twenty-two sorts are the best for forcing:—La Reine, Lee's Perpetual, Geant des Bataillies, Duchess of Sutherland, Madam Laffy, Mrs. Elliott, Basonne Prevost, Louis Bonaparte, Comte de Paris, and Dr. Marx. These require but little heat.

TEA ROSES, &c.—Devaniensis, Eliza Sauvage, Saffrone, Bougere, Blush Odorata, Goubalt, Adam, and Smith's Yellow Noisette. These, like the above, require but little heat.

Moss, Cabbage, Provence, and Unique Roses are the best old sorts for forcing. All roses do best plunged in a gentle tan-bed, with a gentle top heat, and watered with manure water alternately.—H. STILLWELL.

PRICKLING OUT ANNUALS ON TURF.—Last spring you gave instructions about this process, as also to sow seeds upon turfs. I tried both and succeeded most satisfactory. I procured a quantity of good loamy turfs one inch thick, laid them in a frame of mild peat-grass, side down, sprinkled over the surface with *fine* sifted soil, and sowed a quantity of my best annuals, and shaded from sun, keeping the lights closed till the plants appeared; I then gave air freely, and as soon as I dare venture safely, I took out the turfs, having one turf sown with one kind of flower, and I carefully cut them into very small portions, and planted them out in my flower beds and borders. They had no check, not a plant perished, and such a show of fine annuals I never saw before. With my German asters, stocks, zimias, portulaccas, &c., I sowed the seed on turfs; but as soon as big enough to prick out, I did so with them but upon turfs, and gradually inured them to the open air. At the planting-out time I cut the turfs, so as to leave one or two plants on each bit, and thus put them in the beds and borders. By this process not one either flagged or failed. I had not to shade them, or be mortified by seeing them flag or shrivel up, as I often previously had by the old mode of raising on beds, or in pots, and at planting-time, to put them out with the soil separated from the roots.—A. FLORIST.

CAMPANULA VIDALII.—Observing in last year's volume of this Magazine that this beautiful plant does not bloom till a second season, in May I bought a plant, which had been raised the previous year, and

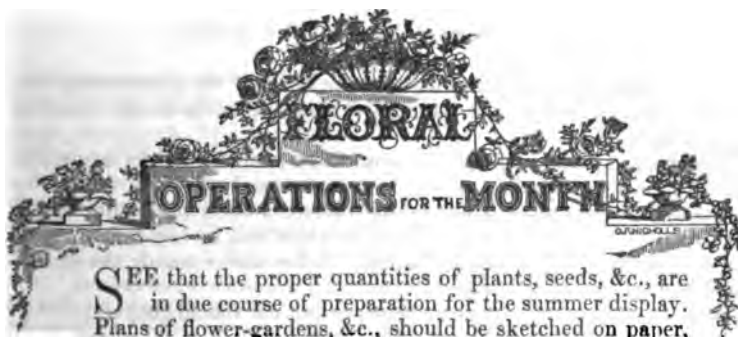
it soon grew to a nice bush, having eight branches; I encouraged it, by having it in a very rich soil, and I had a long spike of flowers on each shoot. The large waxy-white blossoms, of handsome form, rendered the plant one of the most lovely plants I ever saw. It continued to bloom till December. It does well, I am informed, either planted out in a warm place in the open ground about the first week in May, or (as I kept mine), in the greenhouse. It merits a place in both situations, and in every garden. I am glad to see it can be had, too, at a trifling cost.—JOHN BOWYER, St. John's-wood-road.

PROPAGATION OF INDIAN AZALEAS.—By the following mode of treatment I have propagated this beautiful tribe of greenhouse plants as freely as Dahlias or Verbenas are. As soon as the new shoots are from two to three inches long, I cut them off exactly at the place where they started from, at this last pushing, that is, the *union point* of the last season and present season's wood. I dress off the lower half of the leaves, and having a pot half filled with cracks, bits of turfy peat over them, upon which is two inches deep of silver sand. The cuttings are stuck in, watered, and after drying for an hour or two, the pots are plunged in a moderate warm hot-bed; a bell-glass placed over, and shaded from mid-day sun. If too much moisture inside the glass, it is occasionally wiped off. In about three weeks, or a month, every cutting is usually rooted; but a little air is admitted for a week, or ten days, by tilting the glass on one side, and then each cutting is potted off, singly kept in the frame for a week or two, and gradually inured by more air. One-year old plants become wide bushes, and bloom the second season. To make them bushy I stop the leading shoot when it is about six inches high, and side shoots are produced freely.

A LONDON GROWER.

BUSHY BALSAMS.—To have Balsams in bloom for a long period, sow twice. The first in March, and the plants will bloom fine from the middle of May to the beginning of August. Sow again the first week in May, and the plants will bloom from the end of July to November. Till the plants are about six inches high keep them in a hot-bed frame of good heat, from 65 to 75 degrees. After this give them air liberally, to keep them stiff. Clip off *all the flowers*, till the plants have formed a due proportion of branches. Till the plant is formed nearly the size required, branches are the *desired object*; after that *flowers* must be, and a due proportion must be retained. When the leading shoot has risen as high as desired, pinch off the top; this will encourage the branches, and contribute to form a bush. They flourish admirably in equal parts of good turfy loam, which has been heaped, turned, &c., for a year, well rotted cow-dung, and vegetable, or leaf mould, with a free drainage. Give manure water once or twice every week, when the plants have got into a rapid state of growth. Plants thus treated will furnish amazing fine flowers, and form perfect bushes of beauty.

A PRACTITIONER.



SEE that the proper quantities of plants, seeds, &c., are in due course of preparation for the summer display. Plans of flower-gardens, &c., should be sketched on paper, and the appropriate regulations for future arrangement and plans required be put down; this attention is of much assistance.

IN THE FLOWER-GARDEN.—Last month was the best time for grafting shrubs, as Thorns, Limes, &c., but late-growing kinds may still be done, as Rhododendrons, &c.

*Annua*ls, hardy—such as Clarkia, Nemophila, Larkspur, &c., may still be sown in the open bed. Seeds of *Biennials*, too, should now be sown in beds—such as Hollyhocks, Sweet Williams, Scabious, Canterbury Bells, &c. Also seeds of *Perennials*, as Phloxes, Campanulas, &c. Finish planting out Biennials and Perennials, and dividing large patches of border plants. Hollyhocks must be put in immediately; water them as soon as planted. Newly-budded trees, that is those budded last season, should be looked over, and if any portion of the stock be pushing shoots, they must be rubbed off, so that the entire strength should go to the new shoot engrafted.

Auriculas and Polyanthuses.—Give air freely on all suitable occasions, to prevent the flower-stems being drawn up weakly. The blossoms will soon be opening; no water must be allowed to fall upon them, and they must be shaded from hot sun.

Pinks.—If beds of them are required, make them immediately. A loamy soil, made of turfs a few inches thick, and well rotted, with an equal portion of old decayed cow-dung, is admirably adapted for their growth. It should be nine inches deep, and have a good drainage below. The plants must be removed with as much of the ball of soil as possible, and be planted six inches apart. High raised beds are not beneficial, except in low, wet situations. Autumn planted beds should be top-dressed with a little rich soil, and the plants be made firm in their places; a few small sticks stuck around amongst the shoots will prevent twisting off.

Ranunculuses and Anemonies.—When the plants are risen an inch or two high, have the soil pressed closely around them with the hands, stopping up any holes made by worms, &c. A top-dressing, too, of rich compost, free from wire-worm is very beneficial. Often stir up the soil between the rows. Showers of rain are very beneficial for their growth; if none fall, water with *soft* water in the morning; well-water is injurious. Weak manure-water occasionally poured between the plants contribute to vigour.

Tulips.—Stir the surface of the bed an inch deep. Protect from hail, FROST, and strong wind. Keep the soil firm around the stem,

and mind that water does not lodge in the heart of the plant where the infant flower is, or it will be damaged; gently open the leaves to admit the water to drain off.

Hyacinths should be protected from frost, sun, and wind; secure by tying to proper supports. Stir up the surface soil.

Pansies in beds must have the soil pressed around the plants, and a top-dressing of rich soil an inch or two thick will be beneficial. New beds of them should also be planted. A few sticks among the shoots prevent them being twisted.

Chrysanthemums.—Strike cuttings, or pot off rooted suckers.

Roses.—Now plant out the tender China and Tea, or Bourbons, &c.

IN THE FORCING-FRAME.—*Balsams*, *Cockscombs*, *Globe Amaranthuses*, &c., that require potting off, or repotting, should be duly attended to; also *Thunbergias*, *Browallias*, *Lobelias*, *Brachycoma*, &c. Seedling *Fuchsias*, *Verbenas*, *Petunias*, &c., should be potted off singly. *Dahlias*, too, should be placed so as not to be drawn up weakly. *Achimenes* must be potted off singly. (See articles on Culture in previous Numbers.) Tender Annuals, as *Stocks*, *Zinnias*, &c., should be placed in a cool frame or pit, to prevent them being drawn up weakly. Where it is practicable to pick out, such as *Stocks*, *Asters*, &c., upon beds, and protect with frames, it should be done; it gives a robust growth to them. Cuttings of most greenhouse plants may now be put off. Young plants of *Fuchsias*, now procured, if six inches high, will make fine ones for shows in summer.

IN THE GREENHOUSE.—Admit all the air possible. Repot *Lobelias*, *Tigridias*, *Geraniums*, *Verbenas*, and other similar plants for beds. All other kinds of plants, requiring repotting should now be done. Such as are straggling, &c., should be cut in, to render them bushy. *Pelargoniums* will require particular attention in tying up, watering, and fumigating (if green fly be perceived); occasionally give a little manure-water. (See articles on Culture in previous volume.) *Camellias*, when done blooming, examine the roots, and, if necessary, repot (see articles upon, for soil, &c.); then place them in a warm part of the greenhouse or forcing-house, giving due attention to watering, &c., till the wood is firm and flower-buds are set; they may then be removed to a cool pit, so as to be gradually hardened by more air, &c. *Japan Lilies* flourish best in peat soil and sand, *Cinerarias* require particular attention; pot or repot young seedlings, and fumigate if green fly appear.

A careful inspection of the greenhouse plants should be made, to see which require repotting, and do it at once, not waiting till some general performance. Such *Azaleas* as have done blooming must directly be repotted, and their growth afresh be gently promoted in a higher temperature for a short time.

Ericas.—Any requiring repotting should be done directly; avoid too large pots with the less vigorous growers, but free growers will require room to extend in proportion. Give air freely, but avoid draughts, especially from east and north. *Calceolarias* require repotting to have a vigorous bloom.

BRIEF REMARKS.

HORTICULTURAL SOCIETY MEETING, March 15.—The objects of exhibition specially invited on this occasion were hybrid Rhododendrons, forced Strawberries, and salads; but no Rhododendrons or Strawberries came, and only one salad was produced, in the shape of a very fine collection of such vegetables from Mr. Burns, gardener to Lord Stanhope, at Chevening. It consisted of blanched Chicory (the entire-leaved sort), curled and Batavian Endive, Bath Cos and hardy green Lettuce; American, Normandy, Golden, Curled, and Water Cresses; Italian Corn Salad, a much better kind than the common sort; white Mustard, common garden Sorrel, Burnet, Red Beet, Chervil, Cole's Dwarf Red Celery in admirable condition, being sound and solid, and beautifully blanched; Tarragon, early frame Radishes, Chives, and Tripoli Onions. A Banksian Medal was awarded. A similar award was likewise made to Mr. Bailey, Shardeloes, for a Prickly Cayenne Pine-apple, weighing 5lbs. 8oz. It was remarked, that this variety ought to be more commonly cultivated than it is, possessing, as it does, all the good qualities of an Enville, without any of its bad ones. Mr. Butcher, gardener to W. Leaf, Esq., of Streatham, sent two bunches of Muscat, of Alexandria, Grapes, a little shrivelled, but still in good preservation, and a bunch of Black Barbarossa, which, although of last year's produce, was plump and fresh as the best new Grapes could possibly be. A Banksian Medal was awarded it. Of plants, Messrs. Weeks and Co., of Chelsea, sent *Puya Longifolia*, for which a Certificate of Merit was awarded, and cut flowers of *Nymphaea Cærules* and *Dentata*. The *Puya* was fastened on a block of wood like an Orchid, a condition in which its numerous long scarlet flowers produced a brilliant display; and it was mentioned, that, owing to the hardness of their skin, they kept long in perfection. It is one of those high-coloured *Pitcairnia*-like plants which inhabit tropical America, and which are found to be so handsome in our stoves at a season when such things are most wanted. Among miscellaneous subjects were bark and wood of Fitz-Roya Patagonica, from Messrs. Standish and Noble, of Bagshot. The wood bore considerable resemblance to Cedar, being red, smooth, and beautiful; the bark was thick and spongy, and appeared destined by Nature to protect the tree from cold, furnishing additional proof that it will turn out to be hardy in this country, which it promises to be. A collection of varieties of Indian Corn was exhibited by G. T. Davy, Esq., of Sussex-square, Hyde-park. They were from Cusco, and consisted of very fine large kinds little known in this country, but unfortunately too tender for our climate. It was hinted, however, that they might be found worth a trial in some of the Colonies, whose summers are longer and warmer than our own. It was stated that this Cusco corn was quite different from the Indian corn of North America. An imported cone of the New Holland *Araucaria Bidwillii* was contributed by Lieut.-Colonel Sir Thomas Mitchell. It is the *Bunya-Bunya* of the natives, who feed on its large bean-like seeds. From the Garden of the Society came *Oncidium Barbatum*, the fine variety of *Dendrobium Nobile*, called *Blandyanum*, the hardy blue-flowered Californian *Ceanothus Rigidus*, the true *Acacia Colasii-folia*, a useful species for pot culture, two Heaths and *Epacris*, the Swan River shrub *Trymalium Odoratissimum*, *Cytisus Racemosus*, and *Polygala Dalmaisiensis*. The garden also supplied the following varieties of Salad vegetables; viz., Lettuces, Scarole à Fleur Blanche, Chicorée fine d'Été, and Sauvage Améliorée Panachée, Mustard; American, Normandy, and other Cress; *Celeri Gros Violet de Tours*, Early White Winter Radish, Deptford Onion, Burnet, common garden Sorrel, broad-leaved ditto, French ditto, and Oseille de Belleville, by far the best sort; also Chervil, Atkins' Crimson and Sutton's fine Dark Red Beet, Mache Rondo and M. d'Italie; the latter decidedly the king of Corn Salads. Cuttings of the following fruit-trees were distributed; viz., *Dunmore Plum*, a variety raised by the late Mr. Knight, and described in the Society's Transactions. It is a good-sized oval fruit—yellow, although it sprang from a seed of the Purple *Impératrice* and Pollen of Coe's Golden Drop. The flesh adheres to the stone, is yellowish, extremely rich and sugary, so much so, that it shrivels and dries like a preserved Prune. The tree is hardy, and bears well as a standard, ripening later than Coe's Golden Drop. It is not much in cultivation, but is highly approved of by all who have fruited it. *Beadnell's Seedling Pear*.—This is a middle-sized sort, so melting and juicy, that it is scarcely possible for any Pear to be more so. It ripens in the end of September or beginning of October. The tree is vigorous and bears very abundantly. *Noweau Poiteau* and *Colmar tardif Pears*.—These were received from M. Van Houtte as new and good sorts; but as they have not yet fruited in the garden, nothing further could be said respecting them.—*Gardeners' Chronicle*.

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not give much water till the stem appears above the soil, then increase in proportion to the growth. Give manure water once a week, and soft water on all other occasions.—*A Nobleman's Flower Gardener.*

CHINESE PRIMROSE.—An immense number of these beautiful flowering plants are brought to Covent-garden during the winter and spring months. A marked improvement in blooming them is very apparent, especially the single flowered. The coloured ones are now of rich bright colours, some being quite a rich crimson, with a yellow eye. The colours are improved, it is said, by cultivation only.

In the following compost, with due attention, what would have pale rosy-lilac flowers in common soil will produce flowers of a bright rosy-red or crimson, and greatly improved in size. To equal parts of old decomposed *cow-dung*, and well rotted *vegetable mould*, add a liberal sprinkling of sand, and a free drainage. In this compost, both the single and double-flowered bloom most admirably. The refuse from a vegetable or flower-garden supplies the vegetable mould.

TO INDUCE THE MITRARIA COCCINEA, STREPTOCARPUS RHEXII, AND ÆCHY-NANTHUS LOBBIANUS TO BLOOM.—If some one of your numerous readers give me a little advice as to the best manner of cultivating *Mitraria Coccinea*, I should be greatly obliged. I have looked for some account of it in every number of your Cabinet for some time past, without success; also on *Streptocarpus Rhexii*, and *Æchynanthus Lobbianus*. These plants grow amazingly, but do not flower. If you would kindly assist me with your advice in an early Number, it would greatly oblige one of your constant readers for some years.—*M. R. M., Bridgewater.*

P.S. It would also be a favour if particulars of the treatment of *Cereus grandiflorus*, to cause it to bloom, were also given.

CYCLAMENS.—Those who wish to increase their stock of *Cyclamens* should look over them now when they are in flower, and select those for the purpose which are sweet-scented, and otherwise superior kinds. These should be placed on a shelf in the greenhouse, where they can have plenty of air; they will there produce abundance of seed, which, when sufficiently ripe, should be sown as soon as it is gathered in seed-pots or pans, well drained, and filled with equal parts of good loam, sandy peat, and leaf-mould, or well decomposed dung. The seed should be distributed thinly and evenly over the pan, slightly covered with the mould, and kept moderately damp. Early in the autumn the plants will begin to show themselves; let them remain in the seed-pans until the beginning of May following, when a bed should be prepared for their reception, where there are sufficient bulbs to fill it, in the following manner:—Take a layer of well rotted dung, three or four inches deep, the size the bed is intended to be; upon this place, well incorporated together, equal parts of good loam, sandy peat, and leaf-mould, sufficient to make a bed at least nine inches deep. Now turn the plants out of the seed-pans, carefully preserving the points of the roots; for, if the latter are injured or cut off, the plant will make no progress until it has thrown out more roots from the base of the bulb. Then let them be planted from four to six inches apart, according to the size of the bulb. Let them be protected by a frame or hand-lights, give plenty of air, and, as the warm weather advances, take the lights away altogether. They will then need no other care than weeding or watering as may be required. Early in September they should be taken up carefully, and potted into pots varying according to the size of the plants; the smaller ones in 3-inch pots, the larger ones in 5-inch pots; put them in a close frame for about a week, giving a little air occasionally, until they have taken hold of the mould, which should be similar in quality to that mentioned above, with the addition of one-third well decomposed dung, and a little silver sand. At the general time of housing greenhouse plants, give them a good airy position in the greenhouse, and in the following spring most of them will produce a tolerably good show of flowers. Those who have not the convenience of a greenhouse may keep them in a cold frame during the winter months, removing them when showing flower into the drawing-room or parlour as they are wanted. Of course they will not bloom so early as those in the greenhouse; but it is better to have them late than not at all. When done flowering, place them in a cold frame, and pay as much attention to their wants as at any other season of the year; by this means the foliage continues vigorous and healthy. In May turn them out in a sheltered spot, and protect them from the mid-day sun. In September the mould should be shaken from them, any dead roots cut away, and the live ones carefully preserved; then repot into a size larger pot, and place them in their old position—the shelf or the frame. As the season advances, a portion of them may be placed in a warm house or the stove. These will flower much earlier than the rest, thereby prolonging the season of bloom for several months.—*A. K.—Gardener's Chronicle.*

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Dactylis spectabilis.



ILLUSTRATIONS.

DIELYTRA SPECTABILIS.—THE MOUTAN DIELYTRA.

IN previous Volumes we have noticed this truly handsome herbaceous plant; but its being increasingly admired each successive season, as improvements in its cultivation occurs, we are induced to give a figure of it, not only to perpetuate it in our Magazine, but also to allure our readers universally to possess one or more plants, which is adapted to ornament the stove, greenhouse, conservatory, dwelling-room, or flower-garden—growing and blooming freely in each situation.

It is really surprising that this charming flowering plant was not much earlier introduced into our own gardens, as mention is made of its beauty nearly one hundred years ago, by Karamschew, Linnæus, Gmelin, and others. Linnæus, in his *Species Plantarum*, gives *Siberia* as its native country, whilst others state, *Siberia* or *Tartary*. It appears, however, to have been known only in "Northern China or the borders of Tartary and China," and not to be a denizen of any part of the Russian empire. Mr. Fortune, however, on his mission to China, states, he first saw it in the artificial rocks in the Grotto-garden, Island of Chusan, growing along with the very beautiful flowering shrub, *Weigelia rosea*. He adds, "It is one of the plants of which the Chinese mandarins are so fond and that they cultivate with so much pride in all their gardens." He forwarded plants of it to the Horticultural Society, from whence it soon spread in this country. At that period it was grown in our stoves, subsequently in the greenhouse, and latterly in the open bed of the flower-garden, where it grows and blooms most admirably, and proves to be quite hardy. We have seen some noble specimens growing out-doors, but not equal to the specimen which is

described in the following communication which a gentleman forwarded to us last year :

"The plant I alluded to in my recent letter to you, was planted the year before last, in the garden of a gentleman at Lexden-heath, near Colchester, and was then only a few inches high. During that and the last year it grew and flourished wonderfully, but this year it reached a size and form that very far surpasses anything of the kind that I ever heard of. In the middle of August it became necessary to cut it down, on account of its enormous size, to prevent it from destroying some neighbouring Roses, and it then measured upwards of 30 feet in circumference, and 5 feet in height. I have never had an opportunity of examining it closely, but I have constantly seen and admired it from the road in passing by, and I have repeatedly heard from one who has been inside the garden, that what I have here stated is entirely correct. I have also been told that between April and August it frequently bore upwards of 200 perfect spikes of flowers at once, and that it had not a single stem or branch broken by the wind, although in a very bleak and exposed situation. I should add, that it is planted in the richest artificial soil that can be made, and that in winter it is left wholly unprotected. In the flower-garden of the same gentleman there are also extraordinary specimens of the *Myoporum tenuifolium*, the two sorts of *Vincas*, and of the new *Cantua dependans*. I have not seen them myself, but I am informed by good authority that they are of a size and form far beyond anything ever attained in any of our best-managed greenhouses, owing entirely, I believe, to the soil which is given to them."

We find it thrive admirably in our own garden, and is not injured the least during winter, springing up vigorously each succeeding spring. It is one of the prettiest ornaments, too, when grown in pots, either for the greenhouse, sitting-room, or entrance-hall. It is of the easiest culture ; in a rich loam and sandy peat, well drained, it succeeds well. It is readily increased by cuttings, in the same manner as is done with *Dahlias*, also by division of the thick, fleshy roots, securing an eye to each.

NOTES ON NEW OR RARE PLANTS.

CEREUS MACDONALDIÆ.—**MRS. MACDONALD'S NIGHT FLOWERING CEREUS.**—The plant was received at the Royal Gardens of Kew, from Honduras, sent by Mrs. General Mac Donald. It was planted against the back wall of the cactus-house, and it trailed against the wall, where it has bloomed. A casual observer might have passed the plant, and supposed it to be an unusually large-flowered "Night-blowing Cereus," but on inspection, the stems and branches, flower buds, patent petals, and above all the great size of the flowers, fourteen inches across, and fourteen inches long, all indicate a most distinct (magnificent) species. So rapid is the growth of the plant, that the

cutting sent from Honduras soon covered the back wall of a rather lofty greenhouse.

The buds and the flowers are so large, and so showy, that they seem as if they could not belong to such meagre, half-starved leafless branches.

The tube is green, tinged with brown. At night the flower expands. The calyx sepals spread and reflex, *red* at the outer side, and *orange* inside. The petals are white, with a slight primrose tinge, and form a broadish cup inside the deep-coloured sepals. The numerous yellow stamens form a circle around the yellow-rayed style. It is a superb species, well worth cultivating in every suitable greenhouse. (Figured in the *Botanical Magazine*, 4707.)

DENDROBIUM HETEROCARPUM. *The various-fruited.*—A stove orchid from Assam, and was bloomed in the Royal Gardens of Kew. Sepals and petals of a cream colour. Lip disc beautifully velvety, outside cream colour, but inside of a golden yellow, streaked and veined with blood-red lines. The blossoms are fragrant, each is three inches across. (Figured in *Botanical Magazine*, 4708.)

CROSSANDRA FLAVA. *Yellow-flowered.*—Mr. Whitfield discovered this species growing in the fissures of rocks upon the Sugar-loaf Mountain in Sierra Leone, Africa. The plant is shrubby, but does not rise more than six to eight inches above the surface of the ground, and is unbranched. The leaves are nine inches, or more, long. The flowers are produced in a large four-sided spike, of a bright yellow, five petalled, each blossom an inch across, having much the appearance of the blossom of the *Jasminum revolutum*. (Figured in *Botanical Magazine*, 4710.)

PITCAIRNIA ECHINATA; ECHINATED FLOWERED.—The plant is very like one of the pine-apple plants. The flowering stem rises from centre, long, and has a few leaves upon it, which are gradually shorter towards the top. The flowers are pendant, two inches long, with a long footstalk, and are produced in a long spike, calyx sepals are red at the base, and the rest part of a rich yellow. Petals cream-coloured, half as long again as the sepals. It is a very interesting and pretty flowering species. It is supposed to be a native of Mexico, and will require to be either in the stove, or a warm greenhouse. (Figured in *Botanical Magazine*, 4709.)

AQUILEGIA FORMOSA.—This very pretty blooming plant is figured in Mr. Van Houtte's *Flore*. It is a hardy herbaceous, tallish-growing plant. The sepals are, in an early stage, purple, but when the flowers are fully grown they are of a rich orange-red colour, with the petal-like limbs of a pretty yellow. It is very handsome, and merits a place in every flower-garden.

CENTROPOGON TOVARENSIS.—Mr. Linden, of Brussels, obtained this very handsome species from Venezuela, which has bloomed in his nursery establishment. It belongs to the order of Lobeliaceæ, its flowers being produced in terminal racemous heads, similar to *Justicia curnea*, each head having from twelve to twenty blossoms, and the tube of each flower being about two inches long, of a rich carmine red. It is a valuable acquisition to the stove or greenhouse. It flourishes

during summer in the flower-garden. It requires a rich soil, and will bloom throughout summer, and in the stove during winter too.—*Figured in Van Houtte's Flore*, p. 802.

COLEUS BLUMEII.—“Synonym *Plectranthus concolor pictus*,” originally from Java. It is one of the soft wooded plants, similar to the *Plectranthus*. The leaves are large-ovate acuminate, of a lively green, having on the centre portion a large stain of crimson velvet, producing a pretty effect. The flowers are produced in whorls, and form long terminal spikes. The blossoms are small, of sage-like form, three parts of an inch long, the upper portion being white, and the lower part is of a lilac-blue colour. It is a very pretty plant, deserving a place in every greenhouse. It also does well in the open border during summer, being turned out towards the end of May.—*Figured in Van Houtte's Flore*, p. 801.

WEIGELIA METZLER KAMPFII (or *W. amabilis*).—This is said to be one of the finest shrubs ever introduced from Japan. The foliage is very fine, and the flowers are produced in large terminal heads of very rich rose-colour. We understand Mr. Van Houtte gave one hundred and five pounds for the plant.

APHELANDRA MICANS.—The flowers are produced in fine heads, superior to *A. aurantiaca*, and the foliage is much finer. It is a valuable acquisition to the stove, and blooms freely in winter too.

ARDISEA CRENULATA FRUCTO ALBO.—Most of our readers have admired the rich scarlet berries of the *A. crenulata* (similar in size to the common Holly berries), which appear so ornamental in our stoves during autumn and winter. The present plant has white fruit, which contrasts very prettily with the scarlet of the original species. It can be purchased at five shillings each.

BORONIA DRUMMONDII.—The foliage is exceedingly neat, and the flowers of a fine red colour. In Mr. Van Houtte's collection.

GENATHYLLIS TULIPIFERA.—A very charming plant, having the appearance of the *Beaufortia decussata*, with terminal flowers, of a beautiful yellow, veined with crimson, in the manner of tulips, which in form they resemble too.

GLORIOSA PLANTII (from Port Natal).—The flowering stem rises three feet high, erect like those of the upright *Alstræmerias*. At one foot high it produces a cluster of flowers, at two feet another, and at three feet the terminal one is borne. The blossoms are fine, of a beautiful red colour. It is a valuable acquisition for the stove or warm greenhouse. In Mr. Van Houtte's collection.

CENTROPOGON SPECIOSUS.—This is another superb flowering plant, belonging to the order *Lobeliaceæ*. The leaves are of a velvet green above, and a deep red beneath, very handsome. The flowers are of a brilliant orange-scarlet, and their fine heads are very ornamental. It merits a place in every stove or warm greenhouse. In the collection of M. Linden, of Brussels.

CYANELLA METALLICA.—This fine plant is somewhat like the *Medinellas*. The leaves are of a metallic blue, and divided into parts with satin green. This large fine foliage has a striking appearance, said to be unequalled in beauty. In Mr. Linden's collection of stove plants.

ESPELETIA ARGENTEA. — It is from the Andes of Columbia, and grows near to perpetual snow. The leaves are beautifully silvered, in rosettes, and have an elegant appearance. The flowers are yellow, produced in branching spikes, similar to a candelabra.

EIPELETIA NERIIFOLIA. — This is an inhabitant too of the same situation as the previous one. The leaves are green above, but white beneath. The flowers are white, numerous, produced in a large raceme. In Mr. Linden's collection.

DIUSTEMA QUINQUEVAUNERA. — A pretty achimenes-like plant, having glossy leaves. The flowers are white, having five purple spots around the centre of each blossom. In Mr. Linden's collection.

DIPTERACANTHUS PANICULATUS. — From New Grenada. The plant is rather small, but blooms abundantly; the flowers are of a lilac-blue. A handsome plant for a warm greenhouse; strong heat is injurious to its growth. In Mr. Linden's collection.

EUCCHARIS CANDIDA. — It belongs to the *Amaryllidæ*. The flowers are produced in an umbel, drooping, a pure white. It is an elegant plant, and merits a place in every greenhouse or stove. It is from New Grenada. In Mr. Linden's collection.

PASSIFLORA MARMOREA. — A charming plant; the leaves are green, beautifully marbled with white. The form of the leaves is similar to those of the bat-winged *Passiflora*. It is said to have very beautiful flowers too. It is from New Grenada, and merits a place in every stove or greenhouse. In Mr. Linden's collection.

TRIANAEA NOBILIS. — This new genus is a very remarkable one. The flowers are similar to those of the *Cobæa*. It is a neat climbing shrub, having large thick leaves, like those of the *Solandra*. The fine large bell-shaped flowers are exceedingly showy and handsome, and are produced in long axillary peduncles. The corolla is white, and the calyx of a rich rose colour. It is from a temperate part of New Grenada, and is most likely to flourish with us under similar treatment to the *Cobæa scandens*; a valuable acquisition. In Mr. Linden's collection.

PHLOX DRUMMONDI RADETZKY. — Three parts of each petal is of a rich scarlet colour, the outer edge of that colour being feathery. The margin is pure white. It is exceedingly showy and handsome.

P. DRUMMONDI RADOWITZI. — The ground is white, and half the margin of each petal is of a beautiful sulphur. Each blossom has a large striking eye of rosy-carmine, with a white tube in its centre. A very pretty variety; the heads of blossoms are large.

P. DRUMMONDI OCLATA. — Flower white, with a broad band of lavender around a small starry crimson-coloured eye. Blossom large and of good form. Plants are to be forwarded early in May from Germany to a London agent, who is commissioned to supply them to order, by Messrs. Moschkowitz and Seigling.

BEGONIA PRESTONIENSIS. — Messrs. Lucombe, Pince, and Co. forwarded us a large flowering specimen of this magnificent blooming plant. We have got it engraved, but it was too late to appear in our present Number. The plant is of excellent habit, fine foliage, large blossoms, and produced numerous in large panicles. They are of a

brilliant orange-scarlet colour with a golden centre of anthers, contrasting prettily with the other part of the flower. It is very much superior to any other of this charming family—one of the most handsome and ornamental plants we possess. It blooms for about three parts of the year, and highly merits a place wherever it can be grown.

NEW PHLOXES.—The following fine seedling, hardy herbaceous varieties have been obtained between *decussata* and *pyramidalis*, by an eminent florist in France, and are to be had this season.

CHARLES ROUILLARD.—Flowers large, a rosy-carmine lilac, with a large deep cherry-coloured eye; very fine.

DOCTEUR ANDRY.—Flowers large, lilac-violet, with a very dark eye, and at the base of each division there are two spots of white.

FANNY ADUM.—Milk white, and spots of rose around the tube.

MADAME BASSEVILLE.—Flowers large, white, suffused with lavender, and a very striking rich cherry-coloured eye.

MADAME CORBAY.—Milk white, with a violet eye.

MADAME MILLERAT.—White tinged with pink, and a fine eye of vivid carmine. It is of the pyramidal group; very superb.

MADAME DE VATRY.—Pure white, with a large cherry-coloured eye and in immense panicles.

MADAME VEILLARD.—White, with large rose centre, in large panicles; very elegant.

MONSIEUR DOMAGE.—Rosy-violet, with a large crimson eye, in large panicles; very superb.

PRESIDENT DECAISNE.—This is of a dwarf habit; the flowers are borne in large panicles, of a pale carmine, with a very dark eye. The raiser, M. Lierval, has for some time paid much attention to raising seedlings of this beautiful family of plants; some have been sent out in previous years, and the above are now offered and may be had in London this season.

PENTSTEMON GRANDIS.—This is a hybrid from the true *P. gentianoides*, and is of vigorous habit and a free bloomer. The flowers are of a violet-blue, and the throat striped with white and carmine; exceedingly handsome.

ANEMONE FLOWERED CHRYSANTHEMUMS.—Two very beautiful additions to this interesting section are now first offered to the public, viz. :

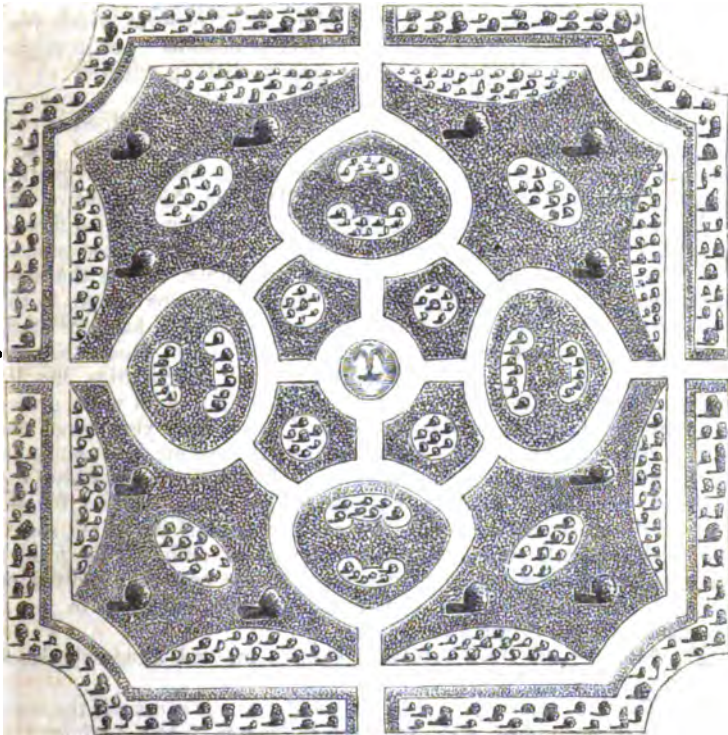
GOLD ANEMONE.—Flower of smaller size, of a rich golden-yellow, and perfect in form. The plant is a profuse bloomer.

REINE DES ANEMONES.—Pure white, the petals large and perfectly regular in form. The centre is yellow and rose;—very handsome. These may be had of an agent near London, and eighteen new, *very double*, beautiful minima Chrysanthemums, well deserving to be in every collection.

DIANTHUS GRANDIS.—This is a very beautiful hybrid, a most free bloomer, flowers large, a lilac-purple colour. It merits a place in every flower-garden.

PLANS OF FLOWER-GARDENS.—By T. RUTGER, Esq.

No. 5.



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It will be perceived by the scale, that the above design embraces a considerable extent of ground, but which may be brought into a less compass if desirable. The shrubbery surrounding it may be widened, so as to allow for flowers inside the grass verge. The segments of circles along the sides of the walks, together with the four oval clumps, can be appropriated for a mixture of flowers, and the remainder for masses. The basin in the centre, for a fountain and gold and silver fish, may be converted into a site for an ornamental sun-dial, or any other architectural ornament. The garden can be entered at either, or all four of the sides.

SEEDLING CALCEOLARIAS.

BY A YORKSHIREMAN.

FLOWER culture in all its branches is a very pleasant occupation, but by far the most exciting part is raising seedlings. In cultivating old varieties there is a staid, sure feeling, a certainty of producing some known feature, a known and admired colour, mark, or form, which your only endeavour is to bring forth as perfect as possible; but in raising seedlings there is the hope of producing something superior to all others—a certainty there is of producing an indefinite number of marks, colours, and forms, all more or less pleasing. With what care you choose the parent of your future *hope*! What a thousand bright pictures present themselves to your imaginations whilst impregnating the one selected for the mother plant! But the chief pleasure and excitement is when the plants are showing bloom, when opening flowers are beginning to show what colour, or form, or marks—some good in one point, some in others, and some in altogether, with a thousand variations, pleasing in some particular, though perhaps not up to the florist standard. Then let those who never yet raised a batch of seedlings begin, for there is pleasure in store for them of which they are little aware. I do not mean that all should raise Calceolarias, but let each try his favourite flower. I have for the last seven years grown some 500 seedling Calceolarias, of which I have each year saved the best. I have now about forty kinds; which, though my own bantlings, would not disgrace a metropolitan show. The following has been my mode of proceeding. In 1845, I purchased six kinds, the best I could find, of the most varied colours; I cross-impregnated the whole, sowed the seed separate, and made memorandums of each. This plan I followed for three years; my aim being to see how they sported or followed after kinds seeded or impregnated with, whereby to lay a foundation for the future proceedings.

The following are the conclusions I came to, and after experience also has confirmed:

1st. The female parent *must* be of good form; of course, if the male parent be of good form also, so much the better; but sometimes you have a desirable colour, or marks, which you want to improve, whose form is not all that you could wish.

2nd. The female parent must not be yellow grounded, or a great majority of the seedlings will be of that colour; the originals being yellow, they stream back.

3rd. To ensure a good healthy habit in the seedlings, the female parent must be of a good habit of growth.

4th. The male parent has most to do with the colour and marks (except the yellows); therefore choose a female parent of good form, healthy habit, and not yellow-grounded, and impregnate with whatever colour or form of marking you wish to imitate.

IMPREGNATION AND SAVING SEED.—When the plants are in bloom, take the bloom of the male parent in your left hand and press your finger lightly against the stamens and the pollen will adhere to it,

then touch the ends of the pestilum (steading the bloom with your left hand) with the pollen on your finger, and part of it will stick to it—the bloom is impregnated. I never could make anything of a camel's-hair brush, so often recommended. In a day or two the bloom impregnated will fall off, and you will soon see the seed-vessel enlarge. It should be guarded from wet; when it begins to turn brown, cut it and lay it on paper for a few days, in a dry place, when the seed will rub out.

SOWING THE SEED.—August is the best time for sowing seed for beginners, because the plants get a good size before winter: the beginning of September, when wintering-room is scarce, and when you have had a little experience. The most suitable soil is sandy peat and a little loam. Seed-pans, four inches deep, are the best to sow the seed in, thus: put half an inch of drainage, then three inches of the above soil, and with something flat make the surface even; water them, and let them stand half an hour, when sow the seed thin, over which sprinkle a little silversand, just to hide the seed: it cannot be covered too lightly. Place a piece of glass flat over the mouth of the seed-pan, and set it in a greenhouse or cold frame, and when the sun shines strong, put a piece of thin paper over the glass as a shade. Should the surface of the soil become dry, syringe it slightly, but beware of heavy waterings. When the young plants begin to appear, gradually remove the glass, but retain the paper in sunshine. At this stage the seedlings are very delicate. When the seedlings are fairly above ground, that is, made a third or rough leaf, place them out of doors, and to guard against heavy rains place a hand-glass over them, supported by three bricks, so that they can get abundance of air night and day: continue to shade from strong sunshine.

PRICKING OUT SEEDLINGS.—As soon as the plants can be handled, prick them out into pans, similar to what the seed was sown in; or shallow boxes answer very well. Let the plants be two inches apart. Soil for this purpose—peat, leaf-mould, and loam, equal parts. In February, pot them into three-inch pots, using the same soil; when the roots reach the outside of the soil, pot them in five-inch pots, in which they may bloom, using more loam in the soil.

THE GENUS DIPLADENIA.

BY MR. J. R. TANTON.

(Continued from page 85.)

WHEN the plants are in full bloom it will be advisable to remove them into a somewhat cooler temperature, which will prolong their beauty and likewise tend to prepare the plant for winter rest. Some difference appears to exist in the opinion of botanists as regards the limits of this genus; and an allied one, called "Echites," has at present defined the species of *Dipladenia* to four in number. The best known is *D. splendens*, which was introduced in 1841, from the Organ Mountains;

and is more generally cultivated than any other member of the genus, on account of its producing such lovely rose-coloured blossoms, very large in size. The second is *D. crassinoda*, introduced from Rio Janeiro in 1842; flowers a brighter rose than *splendens*, but smaller in size. The next is *D. atropurpurea*, from Brazil in 1842; flowers a dark purple. The fourth is *inophylla*, introduced in 1847 from Brazil, having deep salmon flowers. It may be interesting to our readers to know that this genus belongs to the (Nat. Order) *Apocynaceæ*, the genera of which are generally tropical, throwing out a few representatives only, such as *Vinea* and *Apocynum*, into northern countries. They appear to be most abundant in the hot parts of Asia, and less common in the tropics of America, and very limited in Africa. They are in many cases venomous and very generally to be suspected, although in some cases they are used medicinally, and in others have an eatable fruit. Among the true poisons, *Tanghinia Vennimifera* stands foremost; the kernel of the fruit, although not larger than an almond, is sufficient to destroy forty people; and from a species of *Echites* the Mandingoes are said to smear their arrows, as it is the most deadly poison. In general this genus is narcotic but with considerable acrimony, whence the species are employed, especially their roots, as drastics and epispastics. *Aspidosperma excelsum* is, according to Schomburgh, remarkable for its trunk growing from the lower part into tubular projections, forming cavities, which serve the Indians as ready-made planks, and in the construction of their paddles; the trunk appears as if fluted, or rather as if it consisted of a number of slender trees grown together their whole length. The sages of Ceylon having demonstrated, as they say, that Paradise was in that island, and having therefore found it necessary to point out the forbidden fruit of the garden of Eden, assure us that it was borne on a species of this genera, the *Divi Ladner* of their country, and probably *Tabernacmontana dichotoma*. The proof they find of this discovery consists in the beauty of the fruit, said to be tempting in the fragrance of the flower, and in its still bearing the marks of the teeth of Eve. Till the offence was committed which brought misery on man, we are assured that the fruit was delicious; but from that time forward it became poisonous, as it now remains.

TREATMENT OF FUCHSIAS, WITH A FEW HINTS ON THEIR GENERAL MANAGEMENT, AND NAMES OF A FEW GOOD VARIETIES.

BY MR. JOHN BURLEY, OF WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON.

THIS being the month that these plants should be potted, in order to make specimen plants to bloom after geraniums and other spring flowers have ceased to give us their beauty, no doubt many of our readers will now be procuring new varieties. It is a matter of interest to them to know the quickest and best way to grow them, so as to form fine specimens, and bloom them to perfection as soon as possible. Those of our readers who purchase the new kinds, or some of the best of last year's, we advise always to select strong free plants, with a single

shoot to form a leader. Supposing the plants received are strong ones, in sixty-sized pots, give them a shift into forty-eight-sized pots, using a compost of one-half half-decayed leaf mould, and one-half silver sand and peat, mixed well together; the pots to be well drained with crocks, and a little moss, or any rough soil to be placed over that drainage to keep it free. In the first potting, press the soil moderately firm, and give it a watering with a fine-rose pot, to settle the mould properly. Place the plants when potted in a warm corner of the house, "and, if possible, a moist one too." Admit air sparingly, for a week, until the plants begin to make fresh roots, when give them a little to strengthen them, and shade for about two hours from the mid-day sun. By pursuing the above directions about three weeks, they will require another shift into larger pots, say twenty-sized, when the soil should be one part leaf-mould, half-decayed, one part turf peat, one part rotten dung, and one part hazel loam; let the above be well mixed together, and a little sand therewith to keep it free, and use it in as *rough* a state as possible after it is well mixed. Let the pot be well drained. But a word on draining pots for them:—Let the pots be thoroughly *clean*, place a broken potsherd over the hole in the bottom of the pot, then have a few smaller potsherds and place loosely over the bottom, and a small quantity of pieces of charcoal, placing over the whole a layer of sphagnum moss to keep the soil from choking up. In turning the plant out of the pot, great care is required not to break the boll or the roots, as an accident of this sort often checks the growth and spoils the plants. After the second potting, let them be kept warm and moist for a few days, to enable them to recover the shift and to get fresh rooted in the new soil. After they get well rooted, give plenty of air to grow them strong, shade them from the mid-day sun, and give them a thorough syringing night and morning to promote their growth and keep off the red spider. Water them twice a week when growing with *liquid-manure*, which will very materially promote their vigour. I have here only mentioned two shifts for them; but where large plants are required, and there is room to grow them, they may be grown and potted on using the soil as recommended for them at the second shift, and as rough as possible. Let the plants be trained on the one-shoot system, having the branches to grow regularly out right and left. Never pinch them back, unless it is to shorten a branch that is out of its place. By pursuing the rule for Fuchsia-growing, as above described, I am sure every satisfaction will be given. After plants have finished blooming at the fall of the year, they may be removed from the greenhouse and be placed in the shed, or any cool place out of the reach of frost; and do not give them any water until they are required again in January for cuttings, when they may be removed from their winter quarters to the propagating-house, be well watered, and in a little time they will begin to break. Cuttings strike freely in equal parts of leaf-mould and silver-sand well mixed. When rooted, they should be potted into sixty-sized pots, in the soil recommended for striking them in; when strong enough to repot, shift them into forty-eights, as before described. Some cultivators prefer growing the plants the second year; and to those of our

readers who have accommodation for large plants, I recommend the following method:—After the usual winter's rest, let the plants be removed to a greenhouse, previous to which turn the plant out of the pot it bloomed in, and remove all the old soil; of course all that will come away without injuring the ball of roots; then let it be potted in the compost, as recommended before, give it water sparingly at first, and increase it as the roots push out in growth. Let the long shoots of last season's growth be spurred into about six or eight buds, when they will break out and form fine, not wide-spreading, but close, shorter-branched, profuse-blooming plants. The temperature of the greenhouse should be about sixty degrees. Annexed are the names, with the colours, of a few good varieties that should be in every collection:

Dr. Lindley, crimson tube and sepals, dark-purple corolla, fine.

Duchess of Lancaster, white tube and sepals, vermilion corolla, extra fine.

England's Glory, tube and sepals white, crimson-lake corolla.

Glory, Banks', crimson tube and sepals, dark-purple corolla, good form, well reflexed, free bloomer.

Incomparable, white, with a purple corolla, fine.

King Charming, scarlet-crimson tube and sepals, purple corolla.

Lady Franklin's, white, with a pink corolla.

Mrs. Patterson, white, purple corolla, large and extra fine.

Purple Perfection, fine crimson, dark-purple corolla, well reflexed, and extra good form.

The above are new varieties, sending out for the first time this season; the price is from 7s. 6d. to 10s. 6d. each.

Cartonia, crimson tube and sepals, dark-purple corolla.

Commodore, carmine tube and sepals, plum-purple corolla.

Diadem, a well-reflexed variety, crimson tube, dark-purple corolla.

Gem of the Season, crimson tube, purple corolla.

Hendersonii, deep-crimson tube and sepals, well reflexed, showing a deep-purple, very double corolla.

Roi des Fuchsies, orange tube and sepals, dark-rose corolla, fine and large.

Honey-bell, white tube and sepals, rosy-pink corolla.

L. Elegant, white, vermilion corolla, good habit.

Nil Desperandum, bright-scarlet tube and sepals, corolla violet.

Verria, dark-crimson tube and sepals, purple corolla.

Ariel, white, vermilion-scarlet corolla, well reflexed.

Beauty of Deal, white tube, vermilion corolla, fine.

The twelve varieties last named are the best of last season's production, and may be purchased at a trifling cost. There are some of previous years' raising which are of first-rate excellence, quite equal in some respects to the later ones; their true colours and properties will be found in the published catalogues. The freedom with which this fine and highly-interesting family of plants bloom, the long period they are in flower, and their ease in cultivation, alike contribute to render them deserving of universal cultivation in every greenhouse, sitting-room, and flower-garden.

CULTURE OF MANDEVILLEA SUAVEOLENS.

BY MR. F. THORNE, OF SHUCKBURGH PARK.

FOR some years after this charming flowering-plant was first cultivated in England, it was treated as a stove-climber. In such a situation it will flourish admirably, but will not produce flowers so freely as when grown in a cooler temperature. It merits a place in every conservatory or greenhouse. During its growing season it can hardly be grown in too moist a temperature, as the foliage is very readily attacked by the red spider. In a moist stove this insect seldom appears. Also this plant is much subject to the green fly. A slight fumigation is often requisite. Its large pure-white, funnel-shaped blossoms render it very attractive; they are also very odoriferous. The following mode of treatment I have found to answer every expectation:—I generally find it to strike more freely from *layers* of the *previous year's growth* than by cuttings. To promote the growth of young plants, they are first grown in a moist temperature of about sixty degrees, after which they are placed in an intermediate greenhouse. In this situation the plants grow well and flower abundantly, grown in twelve-inch pots; and when trained to the rafter produce a nice effect, more so than when trained to a wire trellis, as the racemes of flowers show more to advantage. In all stages of growth the plant requires to be syringed overhead once or twice a day, according to the exterior atmosphere; and a slight shading is necessary for a few hours during a hot day. Leaf mould, loam, and sandy peat constitute the compost generally used, in which the plants grow and flower luxuriantly. When the season of growth is completed, water is gradually withheld, and the plant kept in almost a dormant state throughout the winter. When struck early in the year, they will make nice specimens for autumn decoration. I have read of its having proved hardy when planted in a sheltered situation against a south-wall. I cannot vouch for the truth of such a statement. (We have seen it so grown and bloom freely.—EDITOR.)

VARIETY IN FLOWER-GARDENS.

VARIETY is, after all, the great idol which the majority of mankind worship; and for variety's sake it is the common fashion to make almost any sacrifice. Now, without attempting to decide whether or no this eagerness to bow before a shrine identified with inconstancy, be generally praiseworthy, as it is generally prevalent, it may surely be assumed, that at least, as far as regards flower-garden arrangements, there is little or no folly in becoming one of variety's devotees.

If this be true, the fact militates more or less against the practice of planting large masses of unbroken colours to make up a flower-garden. The end thus attained is no doubt a gaudy display; but, paradoxical as it may appear, the question may be raised, whether, in such cases, gaudiness is not obtained at a sacrifice of effect. Doubtless there is, and ever will be, more than one opinion upon such a point; but at any rate, it may not be assumed as unquestionable that a gaudy

display and elegance of effect are synonymous. The fact appears to be, that here we have a contest—not an uncommon one—whether quantity or quality should prevail. The great glare of colour in the one case, as the more attractive, is commonly set down as the more perfect result; a decision which, upon the face of it, appears questionable.

But it does not therefore follow that colours should not be massed. To be effective, colour must be decided or obvious, and to be decided or obvious, it must not be too much broken or isolated. It seems, therefore, on the whole, that the effort to be made is rather to contract than to enlarge the groups of flower-garden plants, in order that a given space may show a contrast or variety of colour, instead of an unbroken monotonous hue. Size is, however, always relative, and what is large in one place would be small in another, so that no absolute rule as regards the size of masses can be drawn in respect to the distribution of colours.

It is some years since the circle was first recommended as the most desirable figure for flower-beds, and it is now, as it was then, true, that the more perfectly angles in flower-beds, and especially acute angles, are avoided, the better; that is to say, if the bed is to represent a mass or any formal combination of colours; for there is a tendency towards rotundity in the growth of all plants, which renders it next to impossible that angular outlines—especially sharply angular ones—should be fairly filled out with flowers.

The circular or rotund style of flower-beds certainly offers one of the readiest means of promoting variety in flower-gardens planted on the grouping or massing system. Instead of being entirely filled with one kind of plant, such beds may be very readily planted either in zones, or in divergent rays, and from the simplicity of their form, these arrangements of the plants, and consequently of the colours, are obvious, and, being obvious, they are effective. This can never be the case with intricately fitted angles, which, though pretty enough on paper, or even when cut out on the ground, lose all their distinctness when the plants come to grow up in them.

Whether or no circular beds, or beds of rotund character, become more generally adopted, it seems to be desirable that an attempt should be made to impart greater variety to modern flower-gardens, by the more frequent adoption of what may be called compound planting, or, in other words, by forming the larger groups or beds in a flower-garden of several colours in distinct masses, instead of employing one colour only, these several colours being so disposed as to harmonise or contrast, as the case may be, both with those in the same group, and those in the groups adjoining. The individual masses, or sub-groups themselves, should be distinctly recognisable both in respect to size and outline. Probably almost every garden might in this way be made to contain three or four times as many kinds of plants, as if otherwise filled; and this change might be made without any sacrifice of the general effect, but would be rather productive of improvement. Touching this very bearing of the subject, it has been pointedly asked, "Is a red cloak more elegant than an embroidered shawl?"

This or some such principles brought into operation would tend

greatly to supply flower-gardens with what they stand much in need of—a greater variety of vegetable forms. As it is, too much deference is paid to mere colour. For example, because the *Verbena* combines, with a habit and other characteristics admirably adapting it for grouping, considerable variety of colours, mostly brilliant and striking, it is by no means clear, if mere colour is to continue the chief object of attraction, that we may not yet live to see the time, when the term “flower-garden,” will be almost an equivalent to a “garden of *Verbenas*.” A garden of *Verbenas*, however, would have nothing like the interest that attaches to a garden of varieties.—*Magazine of Botany*.

MISCELLANEOUS SECTION.

APPLICATION OF LIQUID MANURE.—Notwithstanding all that has been said respecting the use of manure-water, there is still, I think, room for a few further remarks on the subject. As to its profitableness generally, no doubt remains; but this very fact may, perhaps, occasionally be the means of misdirecting its use. The method of applying it to the roots of plants is so well known, that it requires no comment; but as regards the kind of water suitable to certain sorts of plants, we are guided by guess; and a hope that all will succeed well, more than by any fixed principle of action. I have proved, more than once, that guano has a very injurious effect upon the *Hyacinth*; a quality of guano-water that will make a *Camellia* grow well, producing very dark foliage and large flowers, has, at least in my case, induced a weakly growth, or a state of torpidity in the *Hyacinth*; but the effect upon the latter flower is altogether changed when common dunghill water is employed, with which it will be found a difficult matter to overdo it, provided perfect drainage is secured, and nothing sour permitted to stagnate about the roots. The *Balsam* is another plant with which I have found guano not to agree, when applied while the plants were about six inches in height; some have perished, and others have become attenuated, having all the appearance of having been grown at too great a distance from the glass. I have found, however, that a good mixture of bone-dust in the compost of this plant has given it a robustness which it has not attained without it. I have also found its effects on *Orchids* to vary considerably; but syringing the basket, blocks, &c., with a mixture of weak guano and soot-water, well clarified, has proved of advantage to all; when applying the same, however, in a much weaker form over the foliage, *Zygopetalum Mackayi* and its varieties have become lengthened in the leaves and flower-stalk, so that the individual blossoms were placed at too great a distance apart, causing it to lose much of its effect; *Oncidium ampliatum*, on the contrary, was so much improved under the same treatment, as, at first sight, to be mistaken for the larger-flowered variety by good metropolitan judges. As a general rule, I have found that all evergreen plants having considerable consistency in the leaves, delight in an occasional syringing with weak and clear liquid manure; and in endeavouring to work out this idea, I applied it to some large *Camellias*, which, owing to various

causes, had got sadly unhealthy ; a watering at the roots, together with a syringing, especially after a bright day, was doubtless the principal means of restoring them to perfect health. I syringed a large plant of *Stephanotis Floribunda* in this way, had its roots reduced, and a considerable quantity of fresh soil added, without the loss of a leaf. I might lengthen these remarks, but, perhaps, enough has been said to direct the attention of others to the subject.—*John Richardson, Parham-park, near Storrington, Sussex.*—*Gardeners' Chronicle.*

REVIEW.—*Glenny's Quarterly Review.*—The Second Part has just been published. It contains some valuable information on many subjects connected with Horticulture in its various branches, and in his usual faithful style. The extract we here give is a fair specimen, and, we think, worth the price of the book to all concerned.

"*Bargains in Plants and Seeds.*—That there is a good deal of humbug in the London seed trade cannot be denied ; but it is as notorious that the public have, in a great measure, been the cause of it, and their indiscriminate love of quantity for money has brought it all upon themselves. The thirst for low prices has caused a most unwholesome competition. A scamp sets up for cheap selling, advertises retail seeds at less than he must pay wholesale to procure them himself. Common sense tells us that there are only two ways to do this ; one by adulteration, the other by cheating his creditors. He must cheat somebody, either those he buys of, or those he sells to must be taken in. Yet such is the rage for cheap things that thousands encourage the cheap seller. The fair tradesmen see the ground slipping away from under their feet ; they must either meet the public or lose their business. If none but sensible persons purchased seeds it would be no trouble to show them that they were duped by the cheap sellers ; but it is not so : a vast majority do not know a good seed from a bad one, and nobody but the raiser can know the sort, that is, the particular variety, nor whether it be true or otherwise. The most respectable houses, where every precaution is used, are occasionally deceived. They may know the sample is good and in good condition, but although every seed may grow they may be far from true to the sort they buy it for ; in which case it is worthless, and every ounce they sell injures their trade. The best seedsmen send their own seeds to be grown by regular seed-growers, and pay them so much per quarter, or bushel, or ton, as the case may be, for all they can produce from that seed. There are seed-growers who, judging what will pay them best, will grow on their own account ; but having established a reputation and a connection, they have no difficulty in finding a market among those who know them. But of what use is seed that can only be bought at a full price to compete with the cheap shops ? It is to be regretted that in an article which tells no tales as to its quality for months, the public should be so careless. Every man who has a shilling to spend should have the moral courage to deal with first-rate houses, and be content to pay a first-rate price for a first-rate article, because he is completely at the mercy of the seller, who has many ways of cheating him if disposed to do so. One mode of imposing on the public is to adulterate the article by means of dead seeds, and this has often been done to the extent of 75 per cent. Another

mode is to serve them with an article of which the growth is unknown, and which, for want of a character, will bring no price in the market among creditable buyers. It is, therefore, bought to kill and mix with good seed, or to be retailed at a cheap rate. There is nothing more absurd than buying cheap things for a garden. Thousands of bulbs are sold at the marts under the hammer of rigging auctioneers, and yet failure in the bloom, year after year, will not cure silly people from buying. In seeds a man is not only robbed of the cost, but he loses his ground, his crops, and his season. People can be found who will sell a hundred packets of flower-seeds for a crown; but would a man who has a character to lose, or a connection to preserve, or whose time is worth anything, do so? No; and yet there are persons weak enough to buy the rubbish, because it is cheap. We know we are handling a ticklish subject, and that in this, as in many cases, we may offend people who might do us good. Our hope is, that truth, however ugly, will ultimately prevail; and that if we offend one by telling unpleasant facts, we may gratify ten by opening their eyes to the tricks which are played, and save them from being duped. Good seeds are of such importance, and the cost so small, that we cannot, and never could, account for the prevailing disposition to look at the price. Let us consider, for a moment, that a family wish to provide a crop of cabbages, the difference between the very highest and the very lowest price could not be three pence, and when the crop comes it may not be worth the price paid for the seed, and it may be all that can be required. "Penny wise and pound foolish" is a saying often applied to those who run after cheap things, but in no case does it come with such force as in garden matters. If a man buy what he can see, he may be taken in a little, and pay a small penalty for running after bargains; but in seeds a man is buying a future crop of something that may be good or good-for-nothing; and if the latter, he will have lost all his time and room as well as his money. We, therefore, strongly advise the public to avoid cheap things in all garden matters. Avoid all auctions but those on a man's premises, where there is a tangible reason for selling, and a chance of fair buying. We do not mean a sale where a man once a year pretends his ground is wanted for building, and has a sale with reserve upon every lot worth having. How often have we seen sales on the same premises, and the ground, after it was over, about one-third cleared. The best thing the public can do, if plants are wanted, is to go to a respectable nursery, buy only what is wanted, and of the size it is wanted. Avoid auctions altogether; leave them to the trade, who, if they can buy worth their while, purchase, and if not let things alone. A gentleman may be sure that if he does get a bargain, to all appearance, there is something which the trade discover and which he does not, and that nine times in ten such bargains are dear.

MEANS OF IMPROVING SOILS FOR POTTING.—Amateurs much feel the want of a generally useful compost. I should like some of your correspondents to try the following, and give their report:

Take a quantity of the common mosses (*Hypnum*s answer the purpose best), dry them in a hot room till they will crumble to powder when rubbed in the hand, or, as I do it, through a fine wire riddle.

Do not bake them, though a nearly cold oven will answer in careful hands, for if too much heated, one of the two essential qualities—elasticity, will be deteriorated, and the material partly converted into a clammy matter, perhaps dextrine, or some analogous substance.

Now the peculiar quality of this moss-powder is, that it renders any soil with which it is mixed elastic. Such a compost will never set hard, or become sour. Thus one great amateurs' stumbling-block is at once removed, and hard potting, required by many plants, may be fearlessly practised, as it seems to secure perfect drainage. Mixed with lumpy loam it will grow Camellias well, and it is a capital addition to the strong soil used for Amaryllids. Added to any of the ordinary loamy composts, it makes at once a medium in which almost any stove plant will luxuriate. Begonias grow in it as if they could hardly contain themselves. The same with regard to Gesneras, Gloxinias, and other tuberous sorts.

The second quality hinted at was its powerful and lasting fertilizing property. With regard to proportions, we know that plants will thrive in pure moss, so that we cannot well err on that point. A larger quantity may be used for quick and temporary growth, and less for more permanent potting. It will also be added to stout rough material, or fine and sandy, according as we would grow an *Hedychium* or a fancy *Geranium*,—which last, by the way, will flourish in it; in fact, it seems to act the part of the rotten turf of the nurserymen, so much insisted on, and so hardly to be procured by the generality of amateur gardeners, especially in towns. Now, I assert that it will render the poorest worn-out kitchen-garden soil more than tolerable to the generality of plants, and that is something.—MICKLEWELL.—(*Gardeners' Chronicle*.)

DIPTERACANTHUS SPECTABILIS.—This very desirable plant is, without doubt, the largest flowered one of the genus, if not of the natural order to which it belongs. Its corolla is much larger than that of *D. grandiflorus*; in colour it is a rich deep purple-blue, with dark veins. Like many others of its family, soon after, and even in many instances before, going out of flower, it gets naked, and the foliage turns yellowish. An intermediate house suits it well, as it dislikes fire-heat; a warm frame is, however, the best situation to grow it in, and it should be removed to a house of nearly the same temperature to flower. Cuttings of it, placed in light soil and silver-sand in a gentle bottom-heat, root freely. As soon as they are struck, which will happen in the course of a few weeks, pot them singly in small pots, or, which is much better, put three in a moderate-sized pot. In both cases, while the plants are small, water must be given sparingly during winter, but do not let them become *over dry*. When they begin to make active growth in spring, they should be placed in large pots. Dwarf plants are better than tall ones, as they flower near the tops of the shoots only. The reason why I recommend putting three plants in one pot is, because of itself one makes but little show.—F. SYMONS, *Carelew*.—(*Gardener's Chronicle*.)

NEW PELARGONIUMS.—GLOIRE DE BELLENUÉ.—Each petal has

a *large dark blotch* of the *same size*, and the margin is white. A very striking variety.

JACQUES DUVAL.—The upper petals have a large dark blotch, surrounded with crimson, and a narrow light margin; lower, pink with a crimson spot on each.

JAMES ODIER.—Upper petals have a large dark blotch, surrounded with crimson-scarlet, and a narrow white margin; lower, a crimson-scarlet, and about half the lower portion is white.

ELISE MIELLEZ.—Upper petals a large dark blotch, with a rosy margin; lower, beautiful pink, with a striking medium-sized dark spot.

AUGUSTE MEILLES.—Upper petals, a very dark spot, surrounded by fiery crimson and a pale margin; lower, a pale flesh-colour, having a *round* dark spot on each, and slightly veined.

GUSTAVUS ODIER.—Ground colour, a bright rosy-crimson; upper, having a large dark blotch; and lower, a very dark round spot.

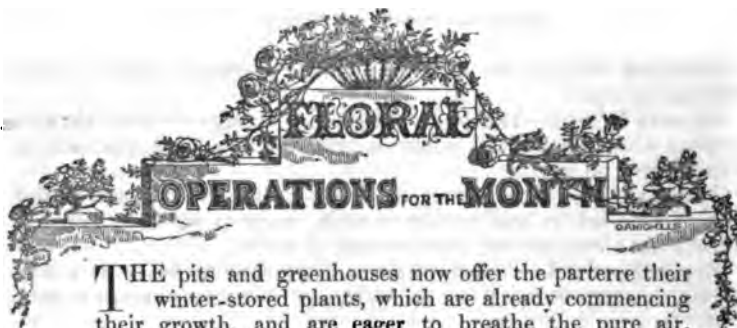
ETOILE DES JARDINS.—Ground colour a bright rosy-red; upper petals, a large dark blotch; lower, a medium-sized black round spot. The flowers are of good size and of good form, quite equal, as apparent in the drawings, to our best in this country. The margin of one is slightly notched at the edge. All are handsome, and would prove a valuable acquisition to any establishment.—*In M' Meilles's Collection.*

NEW AND EXCELLENT "FORCING PELARGONIUM."—Mr. Gill, florist, of Westbourne-grove, has obtained a very valuable seedling, named, "The Queen of February," which proves to be the *best variety* hitherto raised for *winter blooming*. It is a good-shaped flower, a bright rosy-pink, with a dark blotch on each of the upper petals, and a very free bloomer. It blooms admirably from January to May, and will be a valuable acquisition.

HYDRANGEA JAPONICA VARIEGATA.—Mrs. Cooper requesting a description of this very handsome plant, we have to state, it has the habit of the well-known old Hydrangea; the leaves, too, are as large, of a vivid green and pure white, the contrast being exceedingly pretty. The flowers are rose-coloured, and form a large head. We are trying to induce it to produce *blue* flowers, same as is done with the common Hydrangea. It merits a place in every greenhouse or room-window. We think it will prove to be hardy enough to flourish in the open ground, as does the common one. If so, it will be a valuable acquisition to the shrub border.

COMPOST FOR ACHIMENES.—Grown in pans six inches deep and fifteen wide, I have had *A. picta* in the stove four feet high with numerous branches, in profuse bloom. The same with *A. hirsuta* and *pendunculata*. Also all the dwafes-growing kinds, as *A. coccinea*, *elegans*, *venusta*, and *A. grandiflora*, *longiflora*, &c., in an equal degree of vigour beyond what I have seen elsewhere. The following compost is used—Equal parts of old rotted cow-dung, leaf-mould, and turfy-peat, with a liberal sprinkling of bits of charcoal and silver-sand.

A PRACTITIONER.



THE pits and greenhouses now offer the parterre their winter-stored plants, which are already commencing their growth, and are eager to breathe the pure air. Caution must, however, be exercised in being prepared for occasional frosts, with some protection at nights in case of need. If your plans are not yet fully arranged, as to bedding out, &c., lose no time; particular attention should be paid with contrasting the colours to give a good effect. A flower-garden may be richly furnished with plants, but be very ineffective if the colours are badly arranged. For producing a brilliant effect in masses, reject party-coloured flowers; only use pure and decided colours, such as scarlet, pure white, deep purple, bright yellow, &c.; those which are in close affinity kill each other. Take care not to mix plants which are of doubtful duration, when in bloom, with those of a more permanent character, remembering always that the beauty of a formal flower-garden depends upon its being in all its details a perfect work of art, in which no blemish should occur. There must be high keeping, symmetry, judicious arrangement of colours (traceable to fixed principles), or it will not form a satisfactory whole. This should be particularly attended to. Many persons plant their stock so thinly, that their beds are not covered till late in the season; we advise *thick planting* for speedy effect.

When annuals are required for late flowering they may yet be sown; and hardy annuals that have come up too numerous should be thinned out, so as to retain but enough to be vigorous. Tender annuals, raised in pots or frames, should be taken, with as much soil to the roots as possible, and after the middle of the month be planted out. After all planting is done, the next operations will be training and pegging down the plants; this is a most important process towards having well-furnished beds. Climbing plants will now require training from time to time, according to their growth.

FLORISTS' FLOWERS.—Amongst these we may class the *Antirrhinum*; many of the kinds now in cultivation are exceedingly pretty, and deserve to be grown. Now is the best time to plant them out. *Carnations* and *Picotees* are by this time in their blooming pots; and as they advance in growth, attention will be necessary to stick and tie them up neatly. Stir up the surface-soil of the pots, and add a dressing of mixed loam and well-decayed dung. *Cinerarias*.—As these go out of bloom cut down the stems, which will induce an abundance of shoots for increase, and turn them out into the open ground where they are partially shaded. *Dahlias*.—The *third week* in the month is as early as it is safe to commence planting out. The young plants will be greatly strengthened by repotting them into larger pots, giving all the

favourable air possible, in order to have them hardy when turned out. *Fuchsias*.—Repot and trim all the plants required for specimens; encourage their growth by frequently syringing them over-head. *Pansies*.—Cuttings put in last month may now be planted in a shady bed, for summer blooming. A good watering in dry weather will be necessary. Such as are grown in pots, for show, require particular attention, and by thinning out the side shoots much finer blooms may be had. *Pinks*.—As the blooming stems advance they will require thinning out. The more robust and very double kinds should have two or three stems left. *Ranunculuses*.—If dry weather continues, water must be liberally supplied; apply it between the roots and not over the foliage, and use rain-water if possible, preferring evening for the operation. *Tulips*.—The top cloth should at once be got on, and never let the sun reach the flowers after they show colour, but give all the air possible.

IN THE FORCING-FRAME.—Continue to strike cuttings of stove and greenhouse plants, and pot off such as are struck. Plants intended to be flowering specimens for the greenhouse, such as *Achimenes*, *Gloxinias*, *Gesnerias*, &c., should be grown here, and brought forward as rapidly as practicable. What are termed greenhouse annuals, as *Balsams*, *Cockscombs*, *Salpiglossis*, *Rhodanthe*, *Thunbergias*, &c., should be got on quickly. A strong stimulating soil, copious waterings, and ample pot-room, together with bottom heat, are inseparable necessities to their successful cultivation.

IN THE GREENHOUSE, &c.—A free ventilation is of importance, and by closing with a humid atmosphere early in the evening a vigorous growth will be best promoted. Give liberal shifts to such plants as now require it before the roots become matted; much injury is often done by deferring until a general shifting. *Camellias*, such as have formed their flower-buds, should be placed in a sheltered and shady situation out of doors. *Ericas* should have the ends of their shoots pinched off, to render them bushy and spreading. Climbing plants should be neatly tied as they advance in growth, and abundance of flowers will be the result. Shrubby plants of weak growth, and which naturally make *long frail shoots*, are much improved by bending down the branches, and fixing them to a wire attached to the rim of the pot; in this manner the nakedness of the plant at its base is hidden, and the check imposed on the ascent of sap will induce an increased supply of shoots. *Azaleas*, when done blooming, *promote growth*.

Pelargoniums.—Never allow the plants to flag, or the bottom leaves will turn yellow, and the plants then become naked. Put cow, horse, and sheep-dung in equal parts, with a sprinkling of quick lime into a tub, and to one peck of these add five gallons of rain or other soft water. When taking it for use draw it off clear, and give the plants a watering twice a week. Give air freely, shut up early, and syringe the plants overhead three times a week till the flowers expand. Fumigate to keep down green fly.

WATERING.—See the *entire ball* is made moist. A few holes made by means of an iron pin down through the ball will admit water into the interior.

BRIEF REMARKS.

ON DRESSING FLORISTS' FLOWERS.—Twenty-six years ago, come next June, I first saw a box of cut pink blooms to be taken to an exhibition, where a selection out of that box gained the first prize. Afterwards I was admitted by the nurseryman, near whom I had recently gone to live, into the arcana of his art, and was witness to the "milliner's trickery," as your correspondent, Philip Havapek, not inaptly calls it, and scrutinised the form and nice adaptation of the instrument employed, and saw the slow and laborious process by which, through its means, a pink is fitted to shine amongst its compeers, like a young lady at a ball. And as I pondered over the matter, now marvelling at the skill of the operator, now despairing of attaining to his tact, it struck me, as it has struck your correspondent, that there is something very unnatural in all this, and calculated to mislead the public, by establishing a deceptive difference between shown flowers and grown flowers.

But as I have since considerably modified my opinion, and become reconciled to the practice, it is fair to ask whether I can give a sufficient reason for having done so. And this I will try to do.

In the first place, wildness is not a fair representation of Nature, any more than license is of liberty, or a savage the genuine type of a man. The same process of reasoning, if pushed to its legitimate limits, would forbid us to graft or to bud. We must not prune a rose-tree or train a fuchsia into shape by the knife. To stop a pelargonium, and to tie out or peg down its branches, would be tailors' trickery; and in fact, the striking from cuttings itself, is an unnatural process, and must be abandoned. We broke into the *principle* when we became cultivators, and the practice must now be tried on far narrower and less sweeping grounds.

Again, no pink of the present day, and all but no carnation and picotee, can bloom without splitting its calyx and becoming utterly unsightly, unless the calyx is supported by a tie. And this is dressing, as much as the disposal of the petals after expansion. If this be equally objected to, as it often is, the objection is really against having double flowers (which are unnatural), for no single dianthus splits its pod. But if we will not be content without having double flowers, and no good reason can be given why we should, we must be content to take the trouble which they entail; just as when we choose to have flowers in pots, or exotics in a conservatory, we place them in an unnatural condition, and may no longer leave them to unaided nature.

Moreover, the process of dressing is applicable but to few flowers. Philip Havapek has enumerated nearly all of them; and the objection is really no stronger than you have stated in your note to his communication. At the period I have alluded to, there were a few pinks (there were no carnations even then) useless to the amateur who did not exhibit, but which, by pains, might be made to push others, intrinsically better than themselves, from their place at a show. But there are none now. The good may be made to look better, but none unworthy of a place in any selection can now, by such means, be rendered fit for exhibition. Therefore the public deception caused by the practice is reduced within microscopic limits. Would there were no more glaring causes of deception for the public to complain of! Very few flowers admit of much manipulation. Your correspondent will never be led far astray by the pelargonium dresser; nor is the practice common with that flower. My friend and floral guide, Mr. Beck, made it an objection, in these pages, against *Crusader*, that it required that operation; an objection that proves the practice not to be general, or it would have no meaning. And he was so right, that I have since discarded that variety for the fault. In fact, no other flowers than those of the pink tribe require more preparation from the "milliner" than Philip Havapek would himself unconsciously perform upon a rose before he presented it to a young lady—namely, by depriving it of its thorns, and of whatever is dead and unsightly, or would detract from the beauty of the offering, and by presenting it in its most attractive form; and in the pink tribe, the practice must be judged of simply as a matter of competition before judges, like the modes of preparing cattle for an agricultural meeting, in which we consumers are no further interested than as it is a means by which the beef and mutton of the country in general is better than it used to be. The system is part and parcel, though a small one, of that adaptation of means to requirement, by which the old greenhouse, with its straggling unsightly stems, with here and there a spare blossom, has given place to a well-ordered collection of healthy and shapely trees, which, each in its turn, become masses of bloom in their season.—*LOTA (The Florist.)*

The following remarks are from the pen of our friend Mr. Dodwell, of Derby:

"Allow me to offer one word in defence of the poor florist, and in vindication of his practice of 'dressing flowers,' impeached by Phillip Havapek.

"Your correspondent denounces this as 'one of the most pernicious practices connected with floriculture.' He tells us, 'If he attends an exhibition, he is struck with admiration at the beauty of the pinks, or the picotees, or carnations; but if he becomes a purchaser, *do what he will*, they are mere mops.' I beg to tell him he is speaking most mistakenly, and wide of the fact. He never has done *what he could*, or he might have realised beauty equal to that which elicited his admiration.

"The evil he charges against the florist is simply due to his determined disinclination to give time and trouble to the attainment of those objects, from which, when attained, even he cannot withhold his admiration. Your correspondent might *grope* and *display* subjects equal to anything that has been *shown*; but he never will, so long as he hopes never to have the *inclination*. First-rate flowers, combining all possible beauties from *Nature's* hands, are indeed desirable; but I fear they are what your correspondent will never realise on earth; meantime, why does he object to that beauty which he tells us has excited in him so much admiration?

"The question lies in a nutshell; it is simply, Shall art be admitted to assist nature? If your correspondent negatives this, he will carry us back at once to the instincts of the savage, where most of us would decline to follow him; if he affirms it, he can show no reason why art should not be given to the *flower*, which is not equally applicable to the *plant*; a condemnation of the one is a condemnation of the other, and if valid, would apply to the splendour of the diamond, and every object of beauty art creates or enhances, and condemn all to remain in obscurity, because their beauty was conferred by the adventurous aid of man.

"This is the *rationale* of 'dressing flowers;' and the humble florist as correctly creates a beauty in his flowers, as does the sculptor when he gives to the shapeless stone the ideality of his genius. It may be desirable, in the case of new flowers submitted for opinion, that they be seen with all their faults as well as their perfections. This may be easily enforced—my remarks apply to the *art* of dressing, and I am sure, so long as art is known, there will be a propriety in its adoption."—*Midland Florist*.

DR. HOOKER'S SIKKIM RHODODENDRONS IN THE ROYAL GARDENS OF KEW.—A south aspect plant-house, formerly a vinery, contains an entire collection of these fine plants. Among them are strong plants of *R. Campbellii*, *Argenteum*, *Maddenii*, *Aucklandia*, and *Lanceifolium*, and smaller ones of *Thomsoni*, *Lepidotum*, *Edgeworthii*, *Niveum*, *Hodgeoni*, *Cinnabarinum*, *Falconeri*, *Ciliatum*, and *Glaucum*, &c. Several plants of *Ciliatum* are in full flower, and are extremely handsome, each shoot terminating in from three to four blossoms, measuring upwards of an inch across the mouth, while the plants themselves are not more than eight inches high. *Glaucum* also promises to bloom this year, but none of the others. We may mention here, that most of the above varieties have been planted out in sheltered "nooks" of *Rhododendron* clumps along the side of the principal promenade, and that there they have all proved hardy, and *Ciliatum* is covered with flower-buds. Some are also planted among Ferns, in a cool damp house behind the Cactus-house, where they seem to succeed well; but they have failed planted out in a pit, which Mr. Smith attributes to the air being too dry and warm for them. Some of the large thin-leaved kinds, as *Argenteum*, become browned all along the margins of the leaves, from too dry an atmosphere; and it is a curious fact that this happened last summer at the same time, both in the house, in pits, and out of doors.

NEW GLOBE AMARANTHUS.—We have been shown a specimen of the new kind of *Gomphrena*, which the Messrs. Hovey have introduced, and an account of which may be found in the advertising sheet of their Magazine, and also a brief allusion to which is to be noticed in the Magazine for 1850 (XVI., p. 507), and in the "*Retrospective View of the Progress of Horticulture for 1852*," in the January Number for this year, on page 11. The specimen consisted, however, of little else than its terminal head; but from what we did see, we regret that our attention was not drawn to it sooner, and that we could not have seen it in a growing state. We think that it will recommend itself at once, as a new and richly-coloured annual, well fitted to our sunny and almost oriental summers. Mr. C. M. Hovey, who is most familiar with its form and habits, is inclined to consider it as a new species; and as he received its seeds from New Mexico, his opinion may prove to be correct. Should this be so, we think it proper to bestow upon it a name reminding us of those to whom so many in the community are indebted, through their commendable zeal in horticultural and floricultural pursuits, and the New Orange Globe Amaranth will be known as *Gomphrena Hoveyi*.—*J. L. Russell, Professor of Botany.*

ROSE MAGGOT.—Two years ago, on minutely inspecting the buds of my Rose-trees about the end of March, I observed some very small powdery matter about them, and on examining with a glass, I found a very small maggot in the bud; it occurred to me, that as there are side buds which come into growth when the main bud is accidentally destroyed, I should possibly get rid of one set of caterpillars by removing all the main buds; I did so on a large branch, leaving the rest of the bush to take its chance. On the back of many of the buds I found the little creatures busy at work. I noticed the denuded branch during the summer, and found my conjecture confirmed. New buds came, and the branch was covered with flowers uninjured, whilst the rest of the tree was very much infested; the only drawback was, that the Roses on the experimental branch came somewhat later. I repeated the experiment last year with the same result, and I make this communication in the hope that others may be induced to try the same mode of getting rid of one of our worst pests, as the plan has the advantage of extirpating, as far as it is practised, the propagation of the progeny. A quick hand, after the bushes are pruned, would soon clear a number of trees much quicker and very much better than could possibly be effected by hand-picking, when the mischief, in nine cases out of ten, is already irretrievably done. If any of your correspondents should try this mode, perhaps they will communicate their results.—*T. H., Stoke Newington.—Gardeners' Chronicle.*

SUMMER BEDDING PLANTS.—In our last Volume we described a number of the best bedding plants we had seen in bloom, and it now being the time of general planting out, we again remark upon some of the neatest and most showy.

ALYSSUM SAXATILE VARIEGATA.—The plant is perennial, grows from six to nine inches high, flowers yellow. Verbenas, scarlet or purple, planted between, come into bloom when those of the Alyssum are over, and appearing just over the variegated foliage, have a pretty appearance up to the end of summer. *Variegated Sweet Alyssum*, an annual, about the same height, with white flowers, and Verbenas between, is even handsomer than the preceding. *Variegated Scarlet Geraniums* (Mangles's), grown along with the purple or blue Verbenas, are handsome. *Lady Plymouth Geraniums*. This is an hybrid of the odour of Rose Geranium section, having a beautiful variegated foliage, grows from six to nine inches high; the scarlet, crimson, and purple Verbenas along with it render it extremely handsome. The odour of Rose Geranium, having green foliage, and planted along with scarlet, purple, crimson, or bright rose-coloured Verbenas produces a very pretty appearance. We have tried all the above, and in a bed of a sort, are exceedingly beautiful. They have the appearance of what is very significantly applied, a piece of "shot silk." In the flower-garden at Kew Royal Gardens the Verbena Venosa was planted between Variegated Geraniums; the flowers are of a lilac purple; it had a pretty appearance, but not equal to the beds that had more vivid, rich, decided-coloured Verbenas.

CUPHEA PLATYCENTRA.—This forms a neat bushy shrub, from six inches to a foot high, and is a most profuse bloomer from May to November. Its beautiful tubular blossoms, scarlet with a black collar and white head, are exceedingly neat and pretty. Probably a few purple or blue Verbenas intermixed with it would form a pleasing variety of contrasted colours.

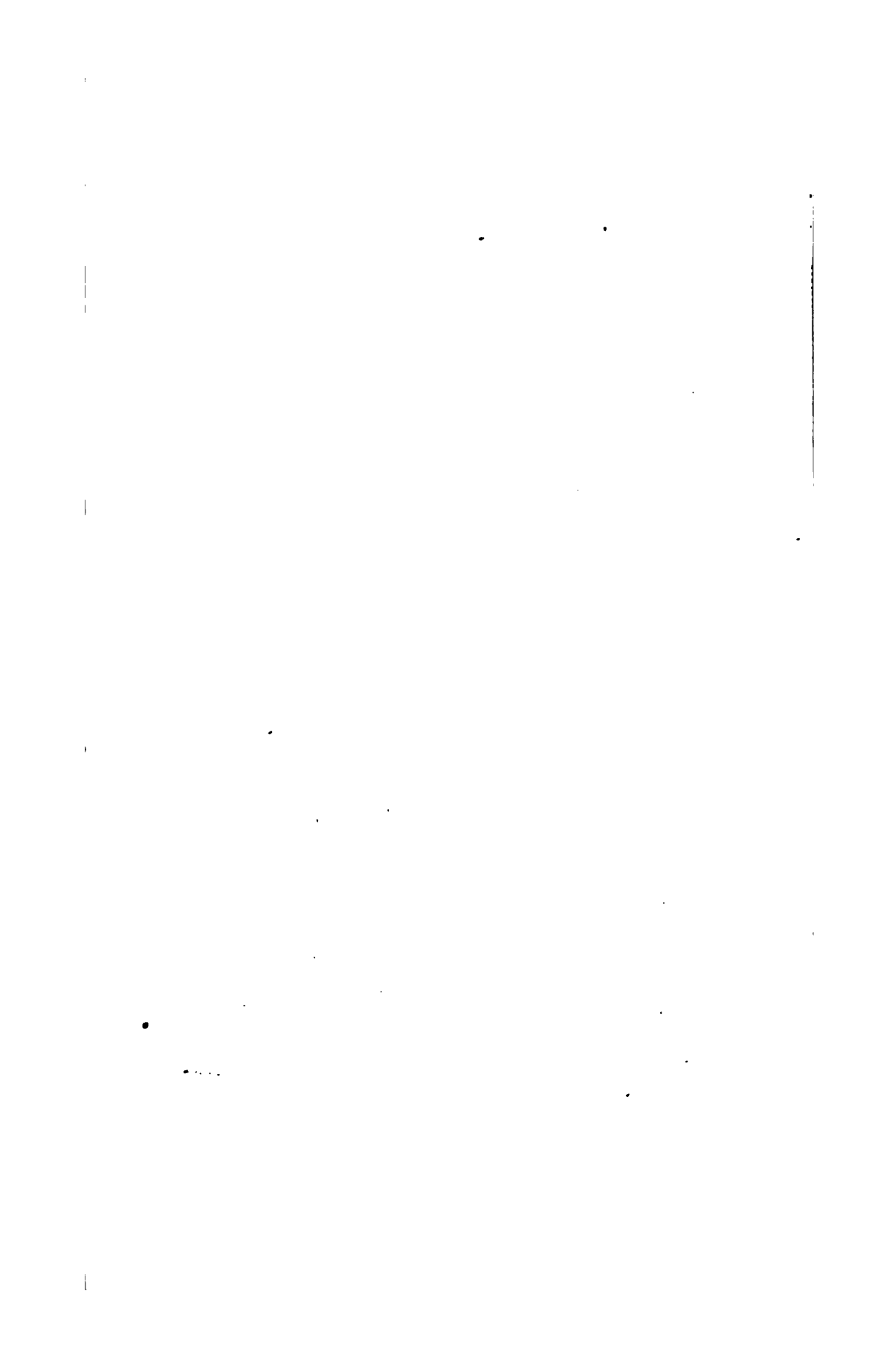
AGERATUM CÆLESTINUM, grows from a foot high, flowers light blue, produced in profusion.

HELIOTROPUM CORYMBOSUM, about nine inches high, flowers white, a most profuse bloomer, the heads very neat and compact. This, grown in contrast with a well-filled bed of *H. Voltairianum*, or *Voltaire Nana*, has a nice effect.

LOBELIAS.—The upright growing section form a splendid bed, growing a collection of the crimson, purple, scarlet, blue, white, lilac, rose, &c., together, the tallest kinds in the centre, and gradually declining to the side, which may be one of the trailing blue flowered, to form an edging.

FUCHSIAS.—Most of these will flourish in the open bed, but there are several now quite of a dwarf habit, growing nine inches to a foot high, which bloom in profusion, and admirably suited for beds. The flowers are of the section originating from the old *F. coccinea*, having crimson, or scarlet tube, and sepals, reflexing with a violet or other dark-coloured corolla. The following are suitable. The *Pet. Lilliputian*, *Minima floribunda*, and *Darling*. There are some of the *GLOBE* flowered, too, which do well, and are of dwarf habit, but they do not show the corolla sufficiently, with the exception of "*Globosa magnifica*;" it is, however, of stronger habit, but the flower is very large, and exhibits a large velvet-coloured corolla. It does well for the centre of a bed.

(To be continued.)





1. *Begonia xanthina*.
2. *Begonia Prestonensis*.



1. BEGONIA XANTHINA.—2. BEGONIA PRESTONI-
ENSIS.

WE do not recollect any other genus of plants which is of equal interest to that to which the beautiful kinds we now figure belongs. The blossoms of all its species and varieties are produced in a most graceful manner, and the diversity, too, which exists in their individual construction, is remarkably entertaining. They also continue in flower for a long period, and many of them bloom throughout the winter and early spring season, when flowers are additionally valuable. It is an additional recommendation, too, that the plants are readily grown, and easily increased.

Most public as well as private collections of stove or greenhouse plants contain one or more kinds of Begonias, but a general collection of them is rarely to be seen. The most extensive perhaps of any is in the Royal Gardens of Kew, where there are upwards of sixty species and varieties. We have frequently seen and admired them when in bloom, taken notes thereof, and the particulars have been inserted in previous Numbers of this Magazine.

Within the last few years several handsome and very distinct kinds have been introduced from other countries, or hybrids have been raised in our own; we refer more particularly to *B. cinnabarina*, having citron-coloured blossoms; *B. hernandifolia*, rosy-red blossoms; *B. fuchsioides*, scarlet flowers, and the white-blossomed variety. The striped-flowered *B. rubro-venia*, white streaked with red. *B. Thwaitesii*, with most beautiful foliage of green, deep red, purple, and violet colours. The one with *yellow flowers*, which we figure herein, viz., *BEGONIA XANTHINA*, is a valuable acquisition, particularly as to the *colour* of its blossoms. It was obtained from the Island of Boutan, in the East Indies, by Mr. Nuttall, of Rainhill, near Preston, in Lincolnshire, in whose garden it bloomed last summer.

However pretty and interesting the above and other species and varieties are, the "*Begonia Prestoniensis*," now figured, very far excels them all. Its *large* brilliant-coloured *fragrant* flowers, produced in *profusion*, render it one of the most handsome, elegant, and ornamental plants of its size we have ever seen, and certainly ought to be grown wherever practicable.

It was raised in the garden of E. L. Betts, Esq., of Preston Hall, near Aylesford, in Kent; and Mr. Frost, the gardener states, that "it was obtained by impregnating *B. cinnabarina* with *B. nitida*, which latter has imparted to it its very free flowering and *shrubby* habit." Messrs. Lucombe, Pince, and Co., obtained the stock of plants, and from them we received our specimen.

Having grown it for some time, those gentlemen state it succeeds well in the greenhouse, too, and the blossoms have the fragrance of a Tea-Rose. Some of the *Begonias* flourish when grown in the dwelling-room window, and the species *B. nitida*, from which the seed was obtained of *B. Prestoniensis*, is one that is often seen in the window; we think therefore that this new and brilliant variety will also flourish when placed there.

Having obtained such rich coloured *Begonias*, having flowers of a bright yellow, brilliant orange-scarlet, rosy-red, &c., by attention to impregnation with more of the light-flowered kinds, other beautiful, improved varieties, will be raised, amply repaying for any labour bestowed.

In the "*Journal of the Horticultural Society*," Part II., there is an excellent article on the culture of *Begonias*, &c., by Mr. Donald, formerly a foreman in the Gardens; he observes—

"In regard to their cultivation, I may mention that *Begonias* are all stove-plants, and that they enjoy a *moist* atmosphere of about 80 degrees in summer, with sufficient shade to break the rays of the mid-day sun. In winter, the atmosphere should be kept dry, especially in cloudy weather, and the temperature allowed to fall as low as 58 degrees. Although *B. Evansiana* and others will stand in a greenhouse, still even these species are much benefited by heat and moisture during the early part of the season. As to the soil most congenial to their nature, there appear to be various opinions. From experience, I am satisfied that *sandy loam* and *leaf-mould* are the two principal materials; and for the kinds that grow luxuriantly these should be used in equal proportions, with bits of pots or charcoal among the soil. For some species, such as *B. coccinea*, which are liable to damp off, the quantity of vegetable matter may be less, and the deficiency made up with silver sand. Damping, however, cannot altogether be attributed to soil, but must be ascribed to bad drainage, or to moisture when the plant does not require it.

"In preparing the pots, some prefer *small* potsherds for drainage: this, in my opinion, is almost as bad as using *sifted* soil; for if the crevices are small, they will be the more easily filled up. For an 8-inch pot, which may be taken as an average size for growing a specimen plant, the potsherds should not be less than three inches across; and if laid to the depth of two or three inches, and properly

covered with pieces of turf, there will be no danger of the roots suffering from damp, if water is judiciously given.

" Begonias being in general plants of free growth, and delighting in *fresh soil*, it is necessary to repot them twice in the course of a year, viz., February and August; but this rule, like many more in gardening, is not without an exception: one plant may grow faster than another under the same circumstances, and therefore ought to be repotted when it requires it, nothing being worse for any plant than to cramp its roots.

" As Begonias are generally intermixed with other plants, and receive a similar supply of water, both in summer and winter, they may well present a sickly appearance. There are few plants that require a more liberal supply during summer than they do; indeed some of the robust growing sorts will flourish with their pots half immersed in water; but, like other plants, they require a season of rest, at which time comparatively little moisture is required. This period is clearly pointed out by nature. In October all the species with which I am acquainted begin to show that water should then be gradually withheld; if it is continued, some begin to drop their leaves, others to decay at the root, or assume a languid appearance: therefore it is obvious that they should be kept dry from the 1st of November to the 1st of February. During that time, if water is given once or twice a week it will be sufficient, and the herbaceous sorts may be kept quite dry. Although many species remain green and healthy in winter, the growth they make is but trifling, nor should they be induced to grow, for if they are deprived of the season which Nature has provided for their rest, the best of management will not compensate for it in twelve months afterwards.

" There are some who imagine that a bushy plant cannot be produced, unless it has been cut down in winter, or pinched back during the growing season; but this is a mistake. If *B. undulata*, or any of the fibrous-rooted sorts, which require pruning, are cut down in winter, the root will in all probability die, and if pinched back, when are they to flower? To such as *B. Evansiana* the knife is never required, because the stems die down annually; and it is never necessary to cut such as *B. heracleifolia*: therefore this matter rests with the tall-growing sorts. To explain this it will be necessary to consider what functions such stems perform. Take *B. undulata* for an example: every stem of one year's growth, notwithstanding its flowering, is a magazine in which secretions are stored for the support, during a certain time, of those which may arise from its base the following season, and thus the stems become analogous to the pseudo-bulbs in Orchids; were not this the case, suckers would rise as strong without the stem as with it, and they would not be liable to damp off, although it should receive an injury. From this it is evident that all the pruning that is necessary is to cut out all the stems above two years old, and this should be done in spring, when the plant is repotted, in order to give room for the young shoots.

" As to propagation, perhaps few plants are so easily increased as Begonias. All those from which cuttings can be taken will strike freely

under ordinary treatment, and such as *B. Barkeri*, from which cuttings cannot be had, may be abundantly multiplied from seed. The seed should be sown when gathered, in light sandy soil, and placed in a moist situation, where the seedlings may be shaded from the rays of the sun."

1st.—Having stems erect, branching, not fleshy at the base, leaves oblique, ovate, acute.

B. Fischeri.—Stems branched, from two to three feet in height, dark crimson, and marked with a few small white spots. Leaves oblique, about two inches in length, slightly toothed, dark green above, quite smooth, presenting a very silky appearance, bright crimson beneath, and singularly crossed with large green veins. Flowers blush-coloured, very small, and generally in threes. It blooms in spring.—*Brazil*.

B. rupestris.—Stems from two to three feet in height, small, but strong, of a brown colour when young, gradually becoming black, and resembling a bamboo in appearance. Leaves oblique, about three inches in length, waved at the margins, of a dark green colour, and beautifully marked on the surface with white silvery-looking spots. Flowers pink, generally produced in spring.—*Brazil*.

B. acuminata.—Stems somewhat slender, from three to four feet in height, rising in great profusion from the bottom, quite smooth, and very little swollen at the joints. Leaves oblique, about three inches in length, rather narrow, and very unequally serrated. In general they are of a lively green colour, tinged with crimson, especially the veins beneath, which are thinly covered with white hairs, extending down the footstalks. Flowers pink, in clusters of from eight to twelve blooms, springing from the axles of the leaves, or the upper part of the stems. It continues to bloom through the whole year.—*Jamaica*.

B. hirtella resembles *B. acuminata* in habit. Stems from three to four feet in height, quite smooth, and slightly striated. Leaves oblique, serrate, from two to three inches in length, of a shining pale green colour, and hairy on both sides. Flowers almost white, in small clusters, generally produced towards the top of the stems. It blooms during the summer months. Syn. *B. acuminata*.—*West Indies*.

B. Martiana.—Stems herbaceous, from three to four feet in height, a little swollen at the joints, of a pale green colour, and marked with a few short white streaks. Leaves oblique, from two to three inches in length, unequally toothed, and covered with a glaucous bloom. Flowers pink, generally in pairs, but in great profusion. This very showy species blooms during the summer and autumn months. Syn. *B. diversifolia*.

B. incarnata.—Stems about four feet in height, swollen at the joints, quite smooth, and marked with a few short white streaks. Leaves oblique, about six inches in length, dark green, waved at the edges, and thinly set with short hairs on the surface and margins. Flowers pink, in clusters of about sixteen blossoms, suspended on footstalks about four inches in length. Blossoms throughout the season.—*Mexico*.

B. rebrina.—Stems strong, from three to four feet in height, channelled, of a dull crimson colour when young, and marked with a

few pale green streaks. Leaves oblique, about six inches in length, bright green on the surface, beautifully marked with dark green shades underside; smooth and shining. Flowers pink, in clusters, suspended by rather short footstalks. Syn. *B. undulata*.—*Brazil*.

B. Evansiana.—Stems herbaceous, from three to four feet in height, enlarged at the joints, which are of a bright crimson, in other parts they are of a pale green colour. Leaves oblique, from five to six inches in length, dark green on the surface, and red beneath. Flowers pink, produced in loose panicles, which continue in beauty from May to September. A common species often to be found in great perfection in the window of the cottager. Syn. *B. bulbifera*, *B. discolor*.—*China*.

B. undulata.—Stems about three feet in height, gradually tapering towards the top, seldom branching the first year, of a pale green colour, quite smooth, and marked with short white streaks. Leaves oblong, from four to five inches in length, waved at the edges, pale green, smooth and shining on both sides. Flowers white, in large clusters, hanging down from the upper portion of the stems. It blooms in autumn.—*Brazil*.

B. argyrostigma.—Stems from three to four feet in height, of a dull green colour, quite smooth, and marked with numerous narrow white streaks. Leaves oblique, about eight inches in length, dark green, quite smooth, and singularly blotched on the surface with silvery spots. Flowers almost white, produced in loose clusters, suspended by rather slender footstalks, generally from four to five inches in length. It blooms in spring and summer. Syn. *B. maculata*, *B. punctata*.—*South America*.

B. odorata.—Stems about three feet in height, of a pale green colour, faintly striated, and tinged with crimson at the joints. Leaves oblique, about eight inches in length, bright green, quite smooth and shining, especially on the under side. Flowers pure white, in large clusters, suspended on rather slender footstalks, generally on the upper portion of the stems. Syn. *B. suaveolens*, *B. sinuata*. It blooms during the spring months.—*South America*.

B. sinuata.—This is closely allied to *B. odorata*; the stem, leaves, and even the flowers appear to be very much alike in both species, and both bloom at the same season; but it differs from *odorata* in having the veins on the under sides of the leaves, and also a portion of the footstalks, slightly hairy. Syn. *B. odorata*.—*South America*.

B. nitida.—Stems woody, long, and straggling, requiring a trellis to keep them up, and generally becoming bare at the bottom. Leaves oblique, from five to six inches in length, of a bright green colour, and smooth on both sides. Flowers pink, in clusters of from twenty to thirty blooms, suspended by footstalks about ten inches in length.—*Penang*.

B. aptera. Very like *B. odorata*, except in the stems, which are quite green, and apparently more disposed to branch. Leaves oblique, about six inches in length, quite flat, and rather long pointed; of a bright green colour, smooth and shining. Flowers white, and produced in graceful clusters, similar to those of *B. odorata*. Like the preceding it blooms during summer and autumn.

B. laurina.—Stems very strong, about four feet in height, branching, green when young, and marked with a few white spots. Leaves oblique, about two inches in length, beautifully serrated, dark green, and smooth on both sides. Flowers pink, in rather small clusters, but suspended in a graceful manner from the lateral branches. This, with the two preceding, blooms during the summer months.

B. sanguinea.—Stems about three feet in height, of a dull crimson colour, and quite smooth. Leaves oblique, about six inches in length, dark green above, bright crimson beneath, and smooth on both sides. Flowers almost white, produced in clusters of from twenty to thirty blooms suspended on footstalks from four to six inches in length. It blooms in summer and autumn.—*Brazil*.

B. coccinea.—Stems from two to three feet in height, quite smooth, of a dull crimson colour, and marked with a few pale green streaks. Leaves oblique, about six inches in length, glaucous, and green on both sides. Stipules large, of a pale green colour, and membranaceous. Flowers bright scarlet, in loose panicles, rising from the axles of the leaves towards the top of the stem. Syn. *B. rubra*.—*Brazil*.

B. ulmifolia grows about three feet in height, branched, of a pale green colour, and thinly covered with short hairs. Leaves ovate, about three inches in length, serrate, pale green, and hairy on both sides. Flowers blush-coloured, in little clusters, suspended by short footstalks from the upper portion of the stem. It blooms during summer and autumn.—*South America*.

B. castaneæfolia.—Stems branched, slender, somewhat swollen at the joints, of a dull green colour. Leaves ovate, about an inch and a half in length, serrate, pale green, and smooth on both sides. Flowers blush coloured, borne on short spurs which are produced in autumn. Although this species flowers only in spring, and then not in such profusion as many others, still it possesses a neat habit, which renders it a desirable addition even to a small collection.—*Brazil*.

Leaves ovate, obtuse, often equal at the base.

B. semperflorens.—Stems almost herbaceous, of a pale green colour, and between two and three feet in height. Leaves about two inches in breadth, nearly round, differing very much from the usual oblique form, bright green, smooth and shining on both sides. Stipules rather large, often adhering to the stem after the leaves have dropped off. Flowers pure white, in short panicles, rising from the axils of the young leaves. This is a very pretty species. Syn. *B. Hookeri*, *B. spatulata*, *B. grandiflora*.—*Mexico*.

B. cucullata.—Stems from two to three feet in height, smooth, of a dark green colour, and slightly tinged with purple at the joints. Leaves oblique, quite blunt, from three to four inches in length, dark green, and smooth on both sides. Stipules very large, fringed, and of a pale green colour. Flowers resemble those of the preceding species, and it also keeps in bloom the greater part of the year. Syn. *B. spathulata*, *B. semperflorens*, *B. grandiflora*.—*Brazil*.

(To be continued.)

NOTES ON NEW OR RARE PLANTS.

CÆLIA MACROSTACHYA (Long-spiked), a stove Orchid-Epiphyte from Mexico, which has bloomed in the Belfast Botanic Garden.—The pseudo-bulb is large, almost globe-shaped; the leaves are a foot or more long, similar in form to those of a *Bletia*. The flower scape is about nine inches high, bearing a dense spike or raceme of flowers, about the same length, of a rosy-red colour. Each blossom is about three parts of an inch long, very interesting and handsome. (Figured in *Botanical Magazine*, 4712.)

PUYA CHILENSIS (Synonyme, *Pitcairnia coarctata*).—A very striking Bromeliaceous plant, from North Chili, which is grown in a cool stove in the Royal Gardens of Kew. The stem has now attained the height of four feet, crowned with its head of long leaves, which are four feet long, spined. The flowers are produced in a compound (branching) terminal spike. The flowers are large, and the three broad sepals form together a bell-shaped blossom, about three inches long. (Figured in *Botanical Magazine*, 4716.)

SANDERSONIA AURANTIACA; *Golden-flowered*.—John Sanderson, Esq., the Honorary Secretary of the Horticultural Society of Natal, discovered this very pretty flowering plant near Pietermaritzberg, Natal. He made a faithful drawing of this, as well as other plants he discovered, and a portion of what he became possessed of were sent to the Royal Gardens of Kew. The *Sandersonia aurantiaca* belongs to the Liliaceæ, having two lobed tubers. The flowering stem is erect, a foot to half a yard high, and about as thick as a crow's quill, bearing several beautiful orange-coloured flowers; they are drooping, subelobose, bell-shaped. Each blossom is about an inch long, and three parts of an inch across, having a long footstalk. In habit it is much like the *Fritillarija* group, and its blossoms somewhat like those of the *Fritillaria* in shape. It is very beautiful, and will be much admired. (Figured in *Botanical Magazine*, 4716.)

SIPHOCAMPYLUS ORBIGNIANUS.—It was discovered in Bolivia, South America, by D'Orbigny. The stem grows from three to four feet high, somewhat straggling; the flowers are nearly erect, about two and a half inches long, yellowish, tinged on the back with red. It requires to be grown in the stove. (Figured in *Botanical Magazine*, 4713.)

MITRARIA COCCINEA.—A fine bushy plant, is in beautiful bloom in the greenhouse of the Royal Gardens of Kew. It has numerous blossoms, each tubular flower near two inches long, of the richest bright scarlet colour, are exceedingly showy, and the graceful pendant manner in which they are borne adds to its beauty. The *Mitraria* merits a place in every greenhouse, and in warm dry situations in every garden. It is a most charming, shrubby, neat-growing, handsome flowering plant.

The following beautiful plants, too, are now in bloom in the Royal Gardens:

DILWYNIA GRANDIS SANGUINEA.—It is an erect-growing plant, with

heath-like foliage; but having had its erect shoots duly stopped, it forms a nice bush. The flowers are of an orange colour, with a red keel; each blossom a third of an inch across, produced in vast profusion. (G. for Greenhouse.)

CHOROZEMA HENCHMANNII.—This plant grows erect, and naturally becomes naked; but when due attention is paid in cutting off the leads, it forms a charming bush, and blooms most profusely. Its rosy-carmine blossoms, with their yellow eye, render such bushes very ornamental. Plants half a yard high, and as much across, are charming objects.

CHOROZEMA VARIUM, and *C. cordatum*, similarly treated as the above, and forming such sized bushes which are very suitable for a greenhouse, not taking up too much room, and in profuse bloom, are very handsome. G.

BORONIA MICROPHYLLA.—A neat bushy plant, half a yard high, having very pretty, delicate, pinnate foliage. It blooms very profusely, each flower half an inch across, white tinged with lilac. Grown in contrast with the bright rose, pink, and red-bloomed kinds, it is very pretty. G.

DRACOPHYLLUM CAPITATA.—The long wire-like shoots, having very short scaly-like leaves, have a singular but pretty appearance, and are easily twined round four or more sticks, or round a tubular-shaped wire frame. A brush is formed around some sticks, half a yard high, and each of the numerous shoots is terminated with a fine head of numerous snowy-white flowers. It is very pretty, and in contrast with the rich colours of others has a cheerful effect. G.

BORONIA, a new species.—The foliage is prettily pinnate, and the fine rosy-purple flowers are borne numerous along the shoots, forming spikes about nine inches long. Each flower is three parts of an inch across. A neat and handsome plant. G.

DILWYNIA FERRUGINEA.—By attention to stopping the shoots, it forms a neat bush, two feet each way. Each flower is three parts of an inch across, of a bright golden-yellow, and, produced in profusion, renders it very ornamental. G.

DILWYNIA SULPHUREA.—It has pretty heath-like foliage, and the flowers are of a deep sulphur colour, produced numerous in long spikes, terminating with a green shoot an inch long beyond the blossoms. G.

CHOROZEMA DICKSONII.—It had been formed to a neat bush, and was a profuse bloom. The flowers are of an orange buff, with a yellow eye, and dark crimson keel. Each blossom three parts of an inch across. Very pretty. G.

TROPEOLUM LOBBIANUM, trained like a bush two feet and a half high, was profusely in bloom in the greenhouse; its rich orange-scarlet flowers were very ornamental. *Tropeolum Hockervazum* has larger flowers, and a profuse bloomer, of similar habit to the former; both deserve a place in every greenhouse, or outdoors in summer.

PROSTRANTHERA LASIANTHUS.—A neat shrubby plant, somewhat like a narrow-leaved cistus. It is a profuse bloomer, each blossom being near an inch long, tube-shaped, in the way of *Peutstemon cam-*

panulata, white, spotted with lilac, and being produced in terminal paniced spikes renders it very handsome. G.

CALYTHREÆ VIRGATA.—A neat bushy plant, with small heath-like foliage. The flowers are produced in long spikes, as well as in terminal heads, white. Each blossom is in form and size like one of the well-known *Saxifraga* (London Pride), and has a quantity of its central (thread-like) filaments, similar to a wild *Hypericum* blossom. It is neat and pretty. G.

DIPLOPAPPUS FRUTICULOSUS.—It is a neat bushy plant, two feet high, having heath-like foliage, and a profusion of Michaelmas Daisy-shaped flowers, which are blue at first, and change to a rich purple. Each blossom has a yellow centre of anthers, and the blossom is three-parts of an inch across. G.

LILIUM GIGANTEUM.—We saw this truly noble plant in bloom at Messrs. Veitch's (late Knight and Perry's nursery), of King's-road, Chelsea. The plant was six feet high, and the stem eight inches in girth at the bottom part, and of a proportionate stoutness to the summit. The flowers are about six inches long, white with dark crimson inside. It is really a magnificent species. The leaves are heart-shaped, about fifteen inches long and ten broad. In a shady stove this and several other stately plants were growing in a most vigorous condition.

The following comprises new or rare plants, shown at the exhibition at the Horticultural Society's Gardens on May 14th.

APHELANDRA (New Species).—Mr. Van Houtte sent this handsome plant. The leaves are of a bright green, and on each side of the midrib there are alternate white bars. Each leaf is six inches long, about three broad, very beautiful.

RHODODENDRON AUREUM SUPERBUM.—Flowers a clear primrose, spotted with deep orange, produced in large heads; each blossom two and a half inches across; very fine.

R. DELICATUM.—Flowers pale flesh colour, spotted with orange. Each blossom three inches across; very fine.

R. GIBSONII.—This plant was six feet high and four across, covered with flowers, which are white, slightly tinged with blush. The blossoms are of neat form, almost like one of the best shaped flowers of the Canterbury Bell.

R. PRIMULUM ELEGANS.—A little lighter sulphur colour than *aureum superbum*, but beautiful.

R. JENKINSONII.—Flowers a pale blush, spotted with deep orange; very pretty.

R. AUREUM.—Buff, spotted with yellow; very pretty.

Mr. Appleby, of Uxbridge, showed six standard plants of *DEUTZIA GRACILIS*, four feet high. The branching heads were drooping, and as full of bloom as it appeared possible for them to be. We saw a quantity of similar plants at Messrs. Veitch's, but we did not admire them so grown in either instance.

Bushes of them have a much better appearance, we think. It is a most lovely plant, covered with its snow-white flowers. It has a pretty effect.

GERANIUM BOULE DE NEIGE.—A white flowered horse-shoe leaved variety. The blossoms are nearly round in form, white, with a slight tinge of flesh-colour sometimes.

FUCHSIA, PURPLE PERFECTION.—Tube and sepals crimson, corolla a rich purple. It is one of the reflexed kinds; very handsome.

F. DUCHESS OF LANCASTER.—This tube and sepals waxy-white; corolla a beautiful rosy-carmine, tinged with violet. The flowers reflex well. It is an elegant variety.

F. PREMIER.—Flower large, of the dark class; sepals and tube of a rich dark crimson; corolla of a deep plum-purple; reflexes well, and is an excellent variety.

CINERARIAS.—There were but few new ones of much merit. *Symmetry*, white, laced with lavender, is very pretty. *Lady Hume Campbell* (not new), white, with a neat blue edging, is very pretty. *Exquisite*, white, with crimson margin; very showy. *Amy Robsart*, a self-coloured rosy-purple, very showy and distinct. *Rosalind*, white, tipped with purple, and a drab-coloured disc (centre); very pretty. *Loveliness*, rosy-crimson, with a pure white ring around a carmine disc; very pretty.

AZALEA RAWSONII.—This is the best of all the purple-coloured. Its form is good, and it makes a fine contrast with the fiery coloured, whites, &c. *Parsonii*, a light purple; pretty. *Iveryana*, a large, fine shaped flower, white, striped with carmine, and a most profuse bloomer. This ought to be grown in every greenhouse. *Broughtonii*, a stout and large flower, of a salmon pink, beautifully spotted with dark. *Aurora*, scarlet, very showy. *Vittata*, white striped, and spotted with violet.

EPACRIS ECLIPSE.—A seedling, shown by Messrs. Veitch; bright scarlet, with a white tip; very pretty.

POLYGALA CORDATA.—This forms a dwarf bushy plant, two feet high, and is covered with its pretty "blue, white, and black" flowers.

FRIESIA PEDUNCULARIS.—A neat dwarf shrubby plant, from Van Diemen's Land. The flowers are white, and have much the resemblance of those of the Lily of the Valley. This was shown by Messrs. Lee, of Hammersmith.

TETRATHECA ERICIFOLIA.—Very neat (as is the well-known *T. violacea*). The flowers are of a pretty lilac colour; nice plants for the greenhouse.

PELARGONIUMS.—There were some collections of both sections shown, and a few new ones; but the next exhibition being the time of their grand display, we omit remarks on these till next month's Magazine.

ORCHID PLANTS were most numerous, and extraordinarily magnificent. We have not space at present to give particulars. The kinds were what are generally exhibited.

FORCED ROSES were extraordinary fine, some of Messrs. Lane's being about six inches across. The kinds shown we will give next month. They were such as *Giant de Batailes*, *Duchess of Sutherland*, *Coupe de Hebe*, &c.

GERANIUM FLORIBUNDAM.—The flowers are white, with a small

blotch, and produced in vast profusion, forming a sheet of bloom. It is an excellent bedding plant.

STREPTOCARPUS BIFLORUS.—Plant similar in appearance to *S. rhexii*, but a more free bloomer, and the flowers double the size of the latter. They are produced, too, in pairs on each stem.

LILIUM GIGANTEUM.—It stood out of doors last winter in Devonshire, where (at Messrs. Veitch's) they had seventeen degrees of frost, and bulbs in the ground are *now* pushing freely.

BERBERIS DARWINII.—This most beautiful, profuse blooming plant has proved quite hardy in every part of the country during the past winter. In the conservatory at Messrs. Veitch's, of King's-road, we saw a dense bush, four feet high and five across, crowded in every part with its lovely blossoms. It ought to be grown in every shrubbery.

THE INSTRUCTIVE VALUE OF THE STUDY OF FLOWERS.

BY MR. PETER MACKENZIE, OF WEST PLEAN, NORTH BRITAIN.

THE best of mortals may receive useful instruction from the study of flowers. They afford subjects for contemplation for minds that are most highly cultivated; and the child of a few months old is delighted with their appearance. Even in the study of a simple blossom, we may observe striking marks of God's skill and goodness. Fuller tells us in what way we should look upon the flowers. "A flower," says he, "is the best-complexioned grass, and daily it weareth God's livery, for he clotheth the grass of the field. In the morning, when it groweth up, it is a lecture of Divine Providence; in the evening, when it is cut down and withereth, it is a lecture of human mortality."

It has also been remarked, If in the long and sombre months of winter our love of Nature, like the buds of vegetation, seems cold and torpid, yet like them it unfolds and reanimates with the opening year, and we welcome long-lost associates with a glowing cordiality, as friends in a foreign clime; and then what a rich and varied succession is it ours to enjoy!

"Fair banded Spring embosoms every grace,
Throws out the snowdrop and the crocus first,
The daisy, primrose, violet darkly blue,
And polyanthus of unnumber'd dyes,
The yellow wallflower, stain'd with iron-brown,
And lavish stock that scents the garden round,
From the soft wings of vernal breezes shed,
Anemones: auriculas enrich'd;
With shining meal o'er all their velvet leaves,
And full ranunculus of glowing red.
Then comes the tulip race, where beauty plays
Her idle freaks;
No gradual bloom is wanting, from the bud
First-born of Spring, to Summer's musky tribe,
Nor hyacinth, of purest virgin white,

Low bent, and blushing inward, nor jonquil
 Of potent fragrance; nor narcissus fair
 As o'er the fabled fountains hanging still,
 Nor broad carnations, nor gay spotted pinks,
 Nor shower'd from every bush the damask rose,
 Infinite numbers, delicacies, smells,
 With hues on hues, expression cannot paint
 The breath of Nature and her endless bloom."

One remarks, that it may be justly questioned whether works of art, however rare and splendid, can yield for any length of time the pleasure which is continually excited by the renovation of flowers in the spring. When they come up with the smiling faces of old friends, and seem to look cheerfully on all around, how many feelings and ideas are associated with them! Pure and innocent as themselves, they are the just objects of infantine regard; they offer to the youthful mind a never-failing resource of rational enjoyment; they are cheering in old age, and yield a calm and elegant satisfaction, which pleases without agitation, and has a beneficial effect upon the health and mind. The old man who walks abroad in a fine spring morning, when the air is fresh and the flowers are opening to the sun, feels his spirit renovated, and his heart expands with joy. The productions of the woods and hedges remind him of those which he has gathered with companions who have perhaps long since departed. Something of melancholy feeling may be connected with the recollection of them, but it is a melancholy which bids fair to render the heart better. He recalls to mind the seasons in which he has seen them bloom and fade around him, and they appear as so many emblems of his own mortality. He may sigh to think that "all flesh is as grass, and the goodliness thereof as the flower of the field," yet they still remind him, that as the loveliness of Nature is restored by the breath of the vernal season, so shall the dead arise from the winter of the grave to light and immortality. He remembers that there is a country which the sacred writers compare to a garden, watered by the river of life, and producing a tree whose fruit shall never fail, in which the unfading flowers of kindness, benevolence, and piety, transplanted from the bleak and churlish atmosphere of this lower world, where even now they bring forth abundant fruits of refreshment and consolation, shall blossom for ever with their beauty undiminished, and their lustre unimpaired.

Well may we say what another has done before us, What a desolate place would a world be without a flower! It would be a banquet without a welcome, a face without a smile, a firmament without a star. But happily such a world is not ours, and the love of flowers seems a naturally implanted passion, without any alloy or debasing object as a motive. Truly indeed does Cowper say,

" That man immured in cities still retains
 His inborn, inextinguishable thirst
 Of rural scenes, compensating his loss
 By supplemental shifts, the best he may,
 The most unfurnish'd with the means of life,
 And they that never pass the brick wall bound
 To range the fields and treat their lungs with air,

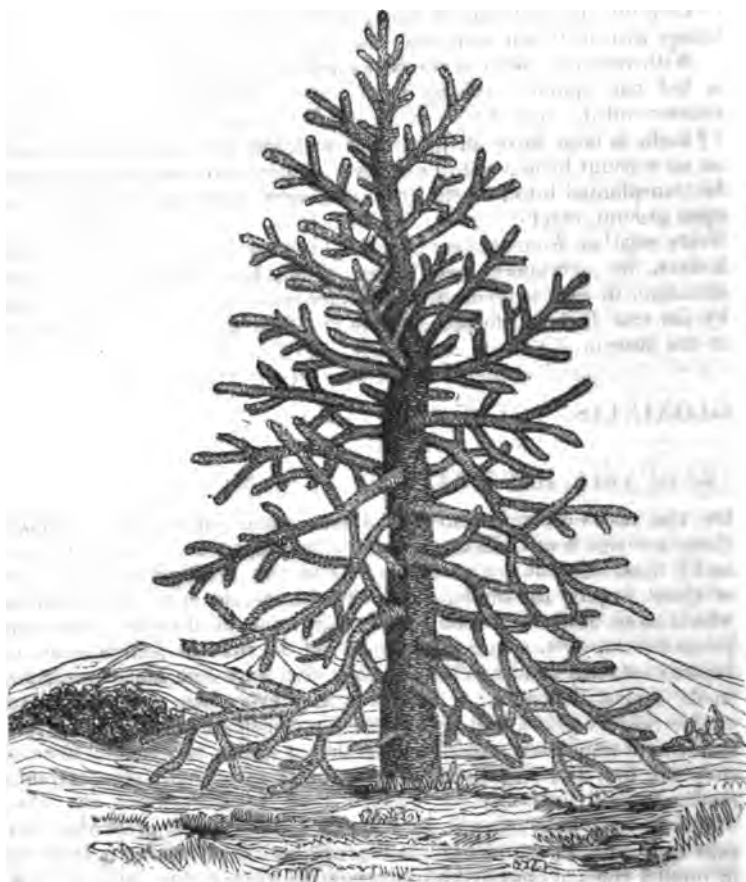
Yet feel the burning instinct : overhead
 Suspend their crazy boxes, planted thick,
 And water'd duly, there the pitcher stands
 A fragment, and the spoutless tea-pot there,
 Sad witnesses how close pentman regrets
 The country, with what ardour he contrives
 A peep at Nature when he can no more."

In conclusion; when an individual is enabled by the light of science to study flowers, they will be found to be surpassingly rich in instruction, admirably fitted to fill the mind with ennobling thoughts and delightful emotions.

Scientific attainments, we are told, aid us in ascending, by means of the ladder of Nature, towards that "Light inaccessible" in which the glorious Jehovah ever dwells; and constrains us to join the celestial company in their rapturous anthem, "Thou art worthy, O Lord, to receive glory, and honour, and power, for Thou hast created all things, and for Thy pleasure they are and were created."

ARAUCARIA IMBRICATA, Pavón. (*Chili Pine or Araucaria*).

ARAUCARIA is derived from ARAUCOS, a name applied to the natives of those districts of Chili where the tree is indigenous. This noble tree is, without exception, the greatest ornament amongst conifers. Its beautiful, regular pyramidal form, and the sombre green of its foliage, command general admiration. It is indigenous to southern Chili, from 35° to 60° latitude, where it is found on the western declivities of the Andes mountain-chains, often reaching the snow-line, and never 1,500 to 2,000 feet below it. According to Pavon, the male tree never exceeds 40 to 50 feet in height, while the female often attains 150 feet. It forms vast forests, and in such has a pillar-like trunk, clear of branches for three-fourths of its entire height; but when standing single, it will probably be clothed with branches from the base. Branches in regular whorls, by 8 to 12 in the lower, gradually diminishing in number and length to the summit, thus forming a beautiful pyramidal cone. They spread horizontally, when young, rather ascending in a curved manner near the top. The lower ones, on account of their length and weight, rather pendent, but with their extremities curved upwards. Leaves 1½ inch long, ovate-lanceolate, sessile, stiff, straight, mucronate, in whorls of 7 to 8, imbricated, smooth, shining, deep-green, entirely clothing the branchlets. They also remain on the body of the larger branches and upper part of the stem, and in young trees the whole trunk is covered with them, though more apart, turned back, closely lying to the stem, as the tree increases in circumference. Cones 6 inches long, globular, egg-shaped, dark-brown, with scales beautifully imbricated, and produced on the extremities of the boughs. One tree has often 20 to 30 cones, each containing 200 to 300 seeds, which are 1 to 1½ inches long, wedge-shaped, brown, edible, and constitute almost the sole subsistence of the natives of the district. In its native habitats it is generally found growing luxuriantly in soils with a



rocky substratum, where kept moist by rains and falls of snow. In this country, a deep, dry sandy loam seems to be its favourite soil. It is remarkable for its huge, long, serpent-like spreading roots, often 2 to 3 feet thick, which lie over the rocks. The wood is hard and durable, yellowish-white, fibrous, and beautifully veined; capable of receiving a high polish, and easily to be worked. It is used for ship-building, but is rather too heavy for masts. Yields a resin, applied to medical purposes, while a spirituous liquor is extracted from the seeds, which are also preserved, or, after being boiled and dried again, reduced into flour. Independently of its great value as a timber-tree, and other excellent qualities, in its native country, it cannot be enough appreciated in Britain for its hardness and ornamental appearance; and no plant can be used with greater effect in distinguishing particular spots of country appropriated to art. It should be on every gentleman's lawn: it is

both elegant and unique ; and if sheltered during frosty weather, so as to keep off that rustiness of colour which a free exposure to the seasons brings with it, it will well repay the trouble in spring time.

With regard to what is the best mode of propagating this tree, there is but one opinion—raising from seeds. Bottom heat is invariably recommended ; and the seeds should be inserted to the depth of about $1\frac{1}{4}$ inch, in large boxes or pans filled with free loamy soil, which should on no account be allowed to get dry. When two years old, they should be transplanted into nursery lines, in a warm sheltered situation, in the open ground, carefully guarding them from excess of moisture, and, in frosty weather, from excess of cold. Those raised in hot-houses, green-houses, &c., certainly look better ; but when planted in their final situation, in exposed places, the former soon take the lead. Planted by the seaside in Norfolk, they have made shoots about 1 foot in length in one season.

GLOXINIAS, THEIR TREATMENT, WITH A LIST OF A FEW OF THE CHOICEST.

BY MR. JOHN BURLEY, OF WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON.

Of the vast number of stove and greenhouse plants now cultivated, there are but few possessing more beauty and variety than *Gloxinias*, and I think there is not another genus of plants that gives us so much of their beauty as *Gloxinias* do. They are easy, too, of cultivation, which is an additional recommendation. I shall here give some plain particulars how they may be cultivated to that perfection they are capable of, their period of blooming, with other matters concerning them, and a list of a few of the best kinds, with their colours, to enable readers who would wish to form a collection to select therefrom ; and those that have a small collection, and wish to add to the same, they will find the varieties undermentioned to give the greatest satisfaction.

Of the soil best adapted for *Gloxinias*, there has a great deal been said and written ; the fact is, most gardeners have their own little way of mixing the soil, some liking it rough, and others fine, &c. ; but they will be found to succeed best in the compost I now describe. *Supposing the bulb is about the size of a filbert nut*, a pot forty-eight-sized, must be used for the first potting, and the compost to consist of one part leaf-mould, one part hazel-loam, and two parts peat,—the whole to be mixed well together, and to be used in a moderately rough state. A sprinkling of sand may be used, to keep the soil free. In potting, use clean pots ; and the *crocks to be clean too*, as nothing is of more importance in the growth of most plants than thorough good drainage. After the plants are ready for another shift, which may easily be ascertained by the roots having filled their first pot, they must be shifted into twenty-four-sized pots, using for compost as follows:—One part leaf-mould, one part hazel-loam, one part peat, and one part rotten-dung from an old melon bed. Let the above be mixed well together, and used in as rough a state as possible, along with a sprinkling of sand to keep it

open. After the roots have filled the pot, they may still have another shift; and when large plants are required for exhibiting, or for show in greenhouse, the pots used for this potting must be sixteen-sized. The compost too for them must consist of one-third hazel-loam, broken in lumps, and one-third rotten dung from an old melon bed, to be well mixed, and used as rough as possible. In potting for the first shift, let the soil be pressed but little; in fact, in all the various pottings the soil should be but just pressed moderately tight, as the frequent watering will enable it to sink sufficiently close together. After the plants are potted they should be kept in the warmest part of the stove, and kept very close for a few days to start them in fresh growth, which may be discontinued and the plants put in a place where they will receive a little air by day. When rotted sufficiently strong in the fresh mould, and as they advance in growth, especially before they bloom, and while in bloom, they must be occasionally watered with *weak liquid manure*, which will greatly strengthen the colour of the flowers. As the shoots get long, which in some varieties they are apt to do, they must be pegged down with care *on the soil on the pot*, and they will form fine dwarf heads, and bloom profusely. No other remark on them is necessary while in bloom, as they merely require to be watched to see they do not suffer from want of water. When the plants have done blooming, watering should be entirely dispensed with, and the pots be placed in some dry situation on a shelf, in a shed or greenhouse, where they should remain for about two or three months, quite dry. When the season for potting arrives, they may then be turned out of the pots they have been resting in, and repotted in twenty-four-sized pots, in the compost recommended, shifting them as they advance in growth, as before stated. When varieties are purchased first from the nursery they are generally received in sixty-sized pots, they should be shifted into forty-eight-sized.

THE TIME OF POTTING. That depends on the time they are required to bloom; viz., if required for exhibition purposes, they must be started to meet the time as near as possible. Now "*for a guide.*" Supposing plants were required in bloom in June, the old bulbs should be turned out of the pots they have been resting in about January; potted, and be kept warm; and being kept growing, in June they will be in fine bloom, and they will continue in beauty the whole of the summer, and form one of the principal attractions in the greenhouse or conservatory.

The following are a few good varieties:

Marie Van Houtte, white and carmine, blotch a fine large flower.

Napoleon, carmine-red and white.

Petoniana, white, with crimson-throat, fine flower.

Alba Grandiflora, pure white, very fine.

Argryostigma Splendens, deep-purple with a fine white throat, and the foliage beautifully striped; a fine variety.

Barrone de Vriere, mottled lilac.

Carminata Splendens, fine rich crimson, large flower.

Daphne, pink, edged with white.

Godfrroi de Bouillon, fine blue.

Grandis, blush, with carmine throat.

Madam Malibran, bright-rose, fine.

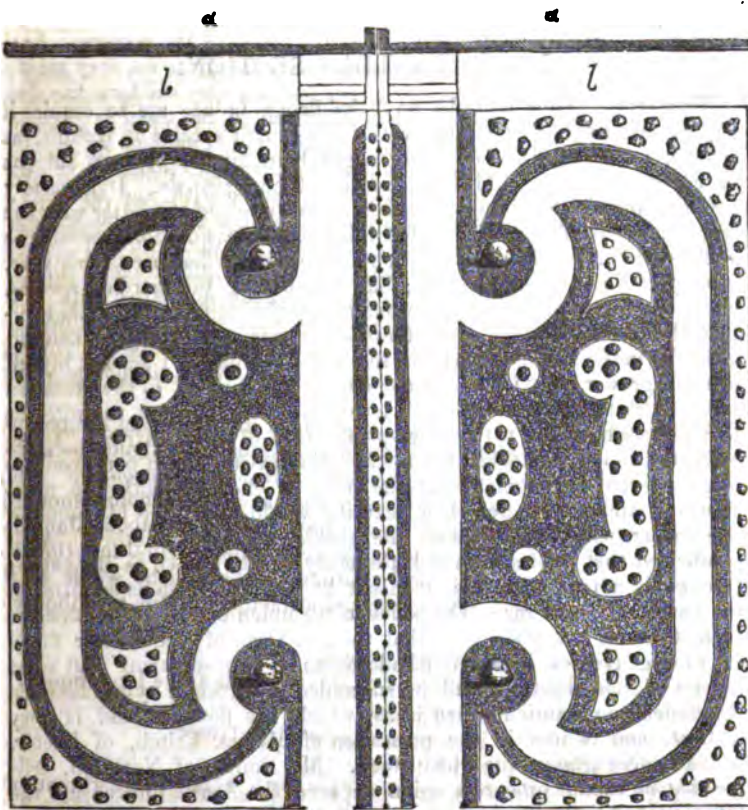
Spectabilis, fine large purple flower.

Victoria Regina, lilac blush, with intense purple throat.

The above list embraces some of the best, and merits a place in every collection. For a larger collection other beautiful distinct varieties may be obtained, there now being one hundred and forty kinds in cultivation.

PLANS OF FLOWER-GARDENS.—By T. RUTGER, Esq.

No. 6.



0 10 20 ft.

WHEN houses are in pairs, with the entrances close to each other, and the front gardens separated by a dwarf fence, such as may be over-

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looked from the approach-walks to the houses, I am inclined to prefer laying out the frontages similar to each other, as seen in the above design, and which I lately adopted at the front of two houses recently erected. The clumps, as indicated, are on grass, and the walks have grass verges round against the borders. The four small round clumps are embellished with ornamental basket-work. The effect of the designs being similar is, that it renders them more pleasing to the eye, and more complete as a whole than if they were varied. The case would be different if the fence between the gardens was sufficiently high to exclude the view from each other. In the design, *a a* represents the houses; *b b*, the areas.

MISCELLANEOUS SECTION.

HYBRIDS.—Your remarks on hybridizing, induce me to inquire if any experiment has been made with the different species of *lychnis*, as I think a race of singular beauty might be obtained, between *fulgens* or *coronata* and the old hardy scarlet of our gardens. If a variety could be raised, combining the robust constitution of the latter with the large blossoms of the former, I think the successful florist would be well rewarded for his pains. Such an experiment has been, this year, attempted in my conservatory; but not having the hardier species, *chalconica*, in my garden, *coronata* was the mother, or rather intended mother; for the whole flower-stem was accidentally broken off, after the individual blossoms had received the pollen. I am not myself a heath grower, but I am very anxious to recommend to the attention of some skilful cultivator of this lovely race, the attempt to unite the hardy British species with the exquisite race of South Africa. I presume that no physiological bar to the union exists, which peradventure might prevent a combination of the *ericas* of the Cape with the *menziesias* of Ireland; if not, how beautiful would the large blossoms of one appear, when suffused with the glowing hues of the other. As it is affirmed that the interesting little hardy shrub, known as *Bryanthus erectus*, is a true *menziesia*, it might be well to test its capabilities as the parent of a new race. Obstacles to the union of various heathworts seem to exist; as I am told that the late Dean of Manchester failed in raising crosses between *Rhodothamnus Kamschaticus* and some species of *rhododendron*, while he succeeded in getting a hybrid between *Rhododendron dauricum atrovirens*, which has flowered and is very distinct, and is now in the possession of Messrs. Veitch, of Exeter, who I believe possess the whole stock. Mr. Smith, of Norbiton, tells me that he cannot procure a union between the *Azalea indicas* and the fine Ghent varieties, though so many fine seedlings of each have been raised by him. I see that Messrs. Rollisson have succeeded in raising seedlings between *Rhododendron Javanicum* and some hardy species, and I believe the same result has been accomplished in the nursery of Messrs. Veitch, so that we may hope to see orange and yellow added

to the other colours of this glorious race. I do not grow many bulbs, but having observed at this early season a strong head of flowers of the Belladonna lily, which had been forced into bloom by having been planted at the foot of a wall, which receives heat from the kitchen chimney, I dusted the stigma with the pollen of a fine *Amaryllis platypetala*, and am hopeful regarding the result of the experiment; but the pollen of the Belladonna had had no effect on the *Amaryllis*.—*A DEVONIAN.—Gardener's Chronicle.*

CANTUA DEPENDENS.—For the last month I have had a fine plant covered with bloom, and it is likely to have a long succession too. It is a last year's plant, and during winter was kept in a dry greenhouse, at its warmest part, and in March I had it taken into the stove. It is a splendid flowering plant.—*A YORKSHIREMAN, near Leeds.*

SPOT ON THE PELARGONIUM.—That what is called "spot" exists more or less every year cannot be denied, and generally from August to January. To many this has been one of the most mysterious things connected with the cultivation of this popular flower, and has been handled both by growers and writers with some timidity, some attributing the cause to one thing and some to another; but as far as my experience has gone, the matter has been settled in my own mind long ago. My belief is, that the sole cause of spot is too much wet received by the plants just before and after they are cut down. How often are plants cut down while in a perfectly soddened state! This may be regarded as the first step to spot, and such a practice should always be avoided. A little consideration will prove this system to be perfectly wrong; for when plants are cut down in a wet state they bleed, and in many instances I have known them bleed to death. The *Pelargonium* cannot be too dry when it is cut down; and as the plants advance in growth the moisture may be increased. Another precursor of spot is, that in many places the plants are allowed to stand out of doors exposed to all weathers, &c., after they are cut down, which is very injurious to their constitution; and when they are watered every plant receives some, whether it requires it or not, and this is often done with a large rosed watering-pot. Such a course I very much disapprove of, and those who follow it can expect nothing less than the spot for their pains; besides, after the plants are watered at night, a storm may perchance "blow up," and still they are unprotected, the plant that has had too much water already still receiving more. I have no doubt that many of your readers, as well as myself, have seen the pots full of water two or three days after rain. Is not this, I would ask, injurious to the constitution of the plant? A dirty, broken frame is equally objectionable, and I believe it helps to bring about spot; but if the frame is clean, the lights washed, and the glass mended, it is very serviceable till September; nevertheless the plants should have abundance of air, the lights only being on during damp weather, and at night air should be given by tilting the lights at the back. The plants should also stand on some hard level bottom, for too much care cannot be bestowed on them for some time after they are cut down. It is very discouraging to a gardener to see his plants in such a state as the spot brings them to, after, as he thinks, he has done all he could

to prevent it. The plants require to be constantly gone over and the spotted leaves removed, and other extra trouble taken, which, if commenced well at the proper time, could have been saved.—(J. DOBSON, in *The Florist*.)

DESTRUCTION OF THE WIREWORM.—Thinking that a brief account of a very simple and efficacious plan for the destruction of the wireworm may either tend to confirm the practical value of some of the essays that may be written on the subject, or by its publication benefit the community, I beg permission to lay the few necessary particulars before the Journal Committee.

That I may not appear to assume what, in this, I have no title to, viz., the merit either in theory or practice of the plan, I must state that it was communicated to me a few days ago by my relation, Mr. Charles Charnock, of Holmfild-house, who himself received it from Sir William Cooke. Some few years after his entry on his farm, Mr. C. was complaining, in the presence of Sir William, of the injury his crops had sustained from wireworm, and lamenting that there was no known way of destroying them. Sir William then informed him that he had heard of and adopted a plan which had proved perfectly effective, and which Mr. C. subsequently followed with the same success.

In lieu of the ordinary top-dressing with rape-dust, apply to the land, and plough or harrow well in, 5 cwt. per acre of rape-cake, crushed into lumps, of about the size of half-inch ground bones, and the result will be that the wireworms will congregate on these lumps of cake, devouring them with such avidity as to become glutted, and perish either from repletion, or from the peculiar properties of the rape, or from the combined effects of the two. Rape-dust will not answer the purpose, because it presents no surface upon which the worms can fix themselves, and no substance into which they can eat their way. Perceiving that a satisfactory result was being attained in the first field to which the cake was applied, Mr. Charnock took up and examined many of the lumps, and found them full of the defunct and expiring enemy. The practice was, of course, followed throughout the farm where the worm prevailed, until in a year or two the land was perfectly freed, and that without any recurrence of the evil.

Mr. Charnock has also on several occasions since had recourse to the same means for preserving his carnations (which are very liable to be attacked by the wireworm), and he has invariably witnessed the same satisfactory result.

The plan is so simple, and apparently so efficacious, that I need not dilate further upon it than to remind those who may be disposed to try it, that whilst they may hope to destroy the worm they will certainly add a rich fertilizer to their land at a reasonable cost.

It should perhaps be mentioned; that the land to which Mr. Charnock applied the remedy is a dry soil on the magnesian limestone, and I believe Sir W. Cooke's was the same; but I see no reason for supposing that it would not be equally efficacious in other soils.—J. M. H. CHARNOCK.—(*Journal of Royal Agricultural Society*.)



THE recent weather has been so cold that it has been hazardous to put out bedding plants; but now half-hardy or tender annuals, Heliotropes, Pelargoniums, Verbenas, Petunias, Celsias, Zinnias, Stocks, &c., may be attended to at once.

We have frequently called the attention of our young readers to the desirability of paying strict attention to the judicious arrangements of flowering plants, as regards height and harmony of colouring. It is true that, of late years, this subject has become a matter of study amongst gardeners, and great changes for the better have taken place in this respect; still we are far from supposing that we have arrived at perfection. Always bear in mind—if beauty, order, and effect are desired—that attention to this, next to a well laid-out flower-garden, is essential to their full development. In producing well arranged contrasts, the different shades of colour must be as distinct from each other as possible: for instance, white should never be placed in contact with yellow, or deep-blue with crimson; but white forms a good contrast with blue or red, blue to orange, yellow to purple or violet, dark crimson to light blue, and scarlet should be placed near those which have a profuse green foliage, as red and green form the best contrast. Orange and violet do well. Greenish-yellow and rose contrast well.

The only attention now required with such is to water freely, being careful it does not pass off; tie up, &c. Pinks and Carnations will require due care in securing, and by the middle of the month pipings of Pinks may be taken off, and towards the end layers of some early Carnations be made. Thin away extra flower-buds. Dahlias will require securing, and thin out the shoots, so as only to retain about four or five. Stop the leading stem, to give support to the side ones. Cuttings will soon strike root. If the weather be dry, water daily a good supply at once: a portion of mulchy manure, spread over the roots, is very beneficial. Seeds of Sweet Williams, Canterbury Bells, Scabious, &c., should now be sown for next year's blooming. Auricula and Polyanthus must be kept in a shady but airy place. Prepare the compost for re-potting in next month. Sow seed as early as ripe. Pansy-seed also sow. (See Articles on, &c.)

NEW FLOWERS.—Let attention be given to hybridising, with a view to obtain improved varieties. Roses: maggots often infest the buds; carefully examine and destroy. Green-fly, too, stop at first by fumigation, &c. (See Articles on.) Chrysanthemums: young plants should be prepared for the autumn. Violets for next year's blooming, attend to beds of, &c. (See Articles upon.)

IN THE GREENHOUSE, &c.

The greenhouse plants may now be placed out of doors; let them be duly watered, for if allowed to flag, the result is the leaves are damaged. Moss sprinkled between the pots keeps the soil cool.

The house will now have to be kept gay and sweet by Balsams, Globe Amaranthus, Cockscombs, Brachycoma, &c. Re-pot as required, to keep the plants in a growing state. Achimenes will now be coming into bloom; they repay for every attention. Cuttings of nearly all greenhouse plants should now be put off: May and June are the best months for that purpose. Cinerarias are highly ornamental, and well worth encouraging. Any done blooming and seed collected, if required, should be turned out of the pots entire into a bed of rich soil, where there is a shade from eleven to four o'clock. There they will flourish, and supply an increase for next year's bloom. Cuttings of Roses may be put in, and will soon strike. Camellias that have been forwarded by forcing the shoots and buds should now be placed in a cooler situation, to give vigour to them. When the grass of Ranunculus or Tulips is quite dead, the roots may be taken up. Pelargoniums, as they go out of bloom, must be prepared for another season. (See Articles on, &c.)

ERICAS.—The early-blooming kinds should be draughted out, and others may follow them as fast as they go out of bloom. Examine the plants very carefully, and see that they are in a proper state as to moisture; and if you are an exhibitor, never put a plant of this or any other kind into a van without previously giving it a good soaking of water. The young plants which are not blooming had best be placed in a pit where they can be exposed or not, as may appear necessary. Stop such as require it boldly back, and train them so as to form a proper foundation for a good specimen. As the principal specimens go out of bloom, they may be removed to a shady situation to make their growth, being previously cut in, if necessary. Supports for an awning must be placed over them, so that in case of heavy storms or continued rain, they can be protected a little. Clear, weak manure-water may be used occasionally for the free-growing kinds. With regard to ventilation, there is no fear of your over-doing it after this time. Re-pot any requiring it, but do not over-pot; the one-shift system is injurious to nearly all the tribe, the only exceptions are those of rapid growth and robust habit. Rough peat and silver-sand, with bits of stone, &c., and a liberal drainage, are requisites. Epacris, &c., should also be duly attended to in repotting, &c.

AZALEAS in the forcing-pit must be kept shaded during bright sunshine, and a moist growing atmosphere must be maintained around them. Water freely with weak guano-water, and sprinkle the vacant parts of the house or pit daily, but not upon the bloom. As the plants go out of flower, place them in heat, to perfect their wood for next year's blooming. (See Articles on in previous volumes.)

BRIEF REMARKS.

HORTICULTURAL, April 5.—Of fruits preserved without sugar or vinegar two collections were contributed, one—by far the best—by Mr. Lovejoy, butler to J. Thorne, Esq., of Mawbey-house, South Lambeth, the other from the neighbourhood of Bir-

mingham. Mr. Lovejoy's consisted of Damsons, Greengages, Plums, Gooseberries, Rhubarb, Cherries, Black and Red Currants, Raspberries, and Mulberries, all in good condition, with their forms nearly as perfect as when first bottled. They were stated to have been treated as follows:—When the stalks were removed they were bottled, and boiling water added, having alum in it in the proportion of 1 drachm to 4 gallons. They were then permitted to stand till they had become cold, when the bottles were filled and bunged down tight. They were then placed in a copper of cold water, and heated to 176 degrees. After that a piece of bladder was tied over the bottles, and they were sealed securely up. A Banksian Medal was awarded. The second collection, which was very inferior to the above, was shown by Elizabeth Chaddish, cook to S. Edder, Esq., of Handsworth. It consisted of Mussel and Damson Plums (both of 1851 and 1852, the one being about as sound as the other), Bilberries, Cherries, and Gooseberries. A Certificate of Merit was awarded it.—Some Grapes were shown by Mr. Allport, gardener to H. Akroyd, Esq., and Mr. Mitchell, of Brighton. Both were Black Hamburgh; Mr. Allport's being much the better of the two, but unfortunately a little rubbed by travelling. A Certificate was awarded them.—Other fruit consisted of forced Strawberries. Of these Mr. Ingram, gardener to her Majesty, at Frogmore, sent samples of his new seedling called Ingram's Prince of Wales, a sort raised from the British Queen. It is a large variety, and, in the present instance, somewhat coarse; but this is not its character when grown under natural circumstances. For forcing it is said to be much superior even to Keen's Seedling, being a sure setter; and as regards flavour, it is preferred above all other sorts at the royal table. It may be mentioned that, if, after forcing, the plants are turned out, and such flowers as appear removed up to the beginning of September, the plants will produce an abundance of fruit in autumn, when their coarseness will be found to have disappeared. A Banksian Medal was awarded.—Mr. Monro, gardener to the Earl of Clarendon, at the Grove, Watford, furnished unusually large samples of Cuthill's Black Prince Strawberry, showing that its small size, which is sometimes complained of, may be greatly improved under good cultivation. A curious fact belonging to this variety is that it frequently produces blossoms of a deep red colour. A Certificate was awarded.—Of vegetables, Mr. Bates, of Manor-house, East Molesey, Surrey, sent seven heads of excellent Broccoli, for which a certificate was awarded. The sort was not named, but it was certainly very fine, considering the condition in which the late severe weather has left this valuable esculent.—Mr. Lewis Solomon sent some French Peas, which looked as if they had been kept too long.

MEETING ON APRIL, 19TH.—Mr. Myatt produced a bunch of his Victoria Rhubarb, a bright red, large, and showy variety.—Mr. Davis, of Oak-hill, East Barnet, sent three very good bunches of Black Hamburgh Grapes, for which a Certificate was awarded. Other fruit consisted of a dish of Keen's Seedling Strawberries from Mr. Fish, gardener to Colonel Sowerby, of Putteridge Bury, near Luton Beds. They were stated to be examples of what has been gathered at Putteridge Bury rather liberally for these seven weeks past. It was mentioned that, owing to the press of other matters, the fruit had not been thinned this season, or the individual berries would have been better. After trying various plans, Mr. Fish has found the following to answer best for Keen's Seedling. As soon as runners can be obtained they are fixed in 3-inch pots; when rooted they are separated from the parent plants, and re-potted singly in 5 and 6-inch pots—the first for early work, the last for the general crop. In potting, two things are made of much consequence, viz., keeping the crown of the plant well up in the centre of the pot, and packing the soil round it as firmly as possible. They are put in a shady situation for a few days, and then placed on hard ground, where they can obtain as much light as possible. This, with attention to watering, sheltering from heavy rains and severe frost in winter, and starting the plant in a low temperature, seem to be the chief essentials to success, especially when fruit is gathered in the beginning of March. The examples exhibited were received very late, and were much bruised by travelling; but they were well-ripened and fair average-sized fruit.—A Certificate was awarded to Mr. Todman, gardener to Mrs. Buckmaster, of Clapham park, for three heads of Miller's Late White, and a similar number of Dixon's Waterloo Broccoli.—Of foreign produce, Mr. Lewis Solomon, of Covent-garden, sent excellent Green Peas, White Asparagus, and Green Sprew; new Kidney Potatoes, Artichokes, French Horn Carrots, Tomatoes, and a Salad, consisting of Cos and Cabbage Lettuces, as firm and good as at the best season of the year, excellent Curled Endive, and White and Red Turnip-rooted Radishes; the former

much the better of the two. The Tomatoes, we understand, came from Algiers, where they are said to have been grown in the open air; they were certainly as fine as could be produced in this country in September or October. The carrots were also very fine, short and crisp, with a very slender tap root; and the Potatoes equalled those of the best English growth. Indeed, new French Potatoes, succeeded by those from the open ground in Cornwall, have almost driven English forced ones out of the market.

SALE OF MR. EPPE'S HERBATHS.—What kind of prices these realised may be gleaned from the following. We need hardly say that all of them were fine specimens, varying from two to four feet through, and as much high. Obbata fetched 8*l.*; Retorta, 5*l.* 10*s.*; Alberti Superba, 5*l.* 5*s.*; Tricolor Rubra, 3*l.* 7*s.* 6*d.*; Fastigiata Lutescens, 3*l.* 5*s.*; Fur-rugosa, 3*l.* 5*s.*; Macnabiana, 3*l.* 10*s.*; Cavendishii, 3*l.* 5*s.*; Hartnelli Virens, 4*l.* 10*s.*; Vasiflora, 4*l.* 10*s.*; Wilsoni, 3*l.* 5*s.*; Infundibuliformis, 3*l.* 3*s.* Other lots fetched from 1*l.* 10*s.* to 2*l.* 10*s.* each. A few Azaleas and other plants were also sold at the same sale, at prices varying from 2*l.* to 4*l.* per lot.

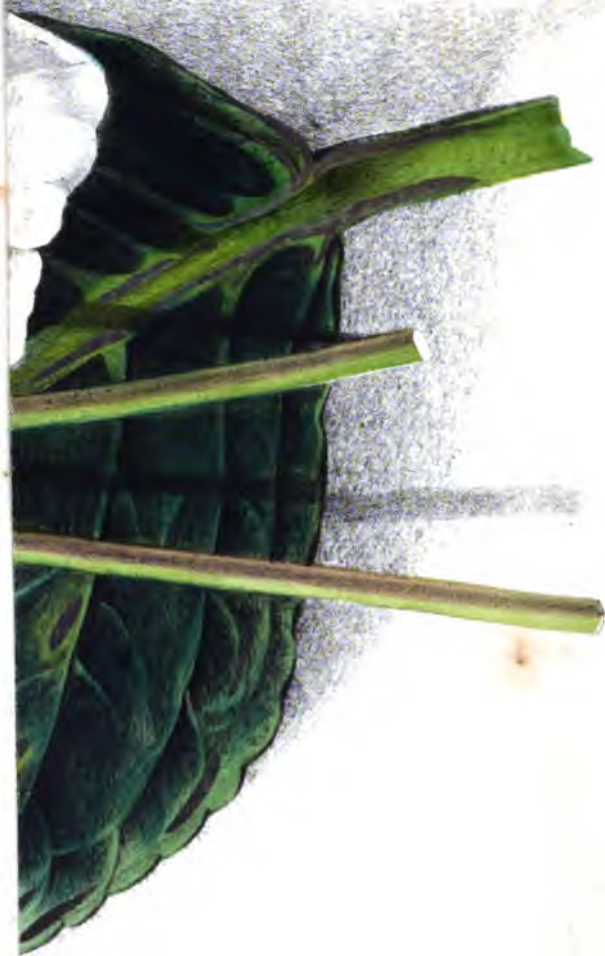
PROPAGATION OF THE HELIOTROPE.—My plan is as follows:—At the end of July I select tops of young shoots, from three to four inches in length, cut them square, that is, horizontally, at the bottom, close under a leaf, taking a few of the lower leaves away; I then insert them in a mixture of loam, rotten leaf-mould, and a little sand. I do not top them. I generally put from forty to fifty cuttings in a broad shallow pot, and place them in a cold frame, sprinkling them now and then to keep them moderately moist, and shading them from the sun; in this way rarely one in forty fails to grow. When rooted, I pot them off, from four to six in a pot, according to the size of the latter, preferring a certain number in one pot to a multitude of small pots. They are then stopped, and may remain until the following March, when they must be potted off singly, for the decoration of the parterre.—*W. Brown, Morevale.—Gardeners' Chronicle.*

PEAT CHARCOAL.—Having observed in your paper of April 30 an article, signed J. Towers, in which the writer states, as the result of his experiments, that peat charcoal has no peculiar power in purifying sewage from its ammoniacal impregnation, so as to form manure, I beg to state that the failure of Mr. Towers must have arisen either from his experiments having been conducted on too small a scale, or from some other cause not fully explained; for it can easily be shown that peat charcoal, under proper management, not only does take up the ammoniacal salts, but that they can subsequently be fixed, so as to form one of the most valuable manures in the country.—*Geo. E. Lane, Superintendent of the Sewage Charcoal Works, Stanley Bridge, Fulham.—Gardeners' Chronicle.*

FAILURE IN BLOOMING RANUNCULUSES.—I am an old subscriber to your Magazine, and my Ranunculuses not having succeeded well during three years, I am anxious for instruction how to proceed in future. The plants come up well, and are apparently healthy, but not more than one out of twenty blooms, or make any signs of it. I have read articles which have been given on the preparation of the bed, and after culture, by Mr. Tyso and others, and which I have strictly followed, but have met with disappointment. I should be obliged if some practical grower of these lovely flowers would, in the next Number, give me advice how to proceed with my present bed of them.—*W. F. Cornwall.*

EFFECTS OF THE LATE WINTER.—The following is the way in which a few of our plants out of doors have fared here:—*Benthamia Fragifera*, much injured; *Buxus Balcanica* and *Cistus Formosus*, unhurt; *Clematis Azurea Grandiflora*, on an east wall, unhurt; *Erica Australis*, a little injured; *E. Mediterranea*, the same; *Forsythia Viridissima*, unharmed; *Garrya Elliptica*, points of shoots killed; *Ilex Balcanica*, unhurt; *Jasminum Nudiflorum*, against a wall, uninjured; *Jasminum revolutum*, on east wall, much hurt; *Ligustrum Lucidum* and *Berberis Fascicularis*, untouched; *Photinia Serrulata*, much injured; *Quercus Suber*, the same; *Spiraea Japonica* and *Thea Viridia*, uninjured; *Vaccinium Myrsinites*, much hurt; *Cupressus Torulosa*, rather browned. Of herbaceous plants:—**Astromeria*, Van Houtte's, not at all harmed; *Dielytra Spectabilis*, more than two feet high, and covered with flower, quite uninjured; *Epidemium Colehicum*, *E. Macranthum*, *E. Muschianum*, and *E. Grandiflorum*, all unhurt; *Jasione Perennia*, the same; *Oenothera Sp. ciosa*, killed, but it was a moved plant; *Pentstemon McEweni*, unhurt; **Platycodon Grandiflorus* and *Silene Schafta*, uninjured; *Statice Pseudo Armeria*, very much damaged, except on a dry bank; **Statice Speciosa*, unhurt; *Veronica Lindleyana*, much injured, but not killed; **Lilium Speciosum* and **L. Testaceum*, unhurt. These two last are coming up very strongly indeed. And lastly, permit me to add, that *Calandrina Umbellata*, in a peat bed, is quite unhurt. Those marked thus * are grown in a peat bed. On the night of Good Friday my register thermometer, in an exposed situation, eighteen inches from the ground, marked 7° or 25° of frost.—*A. R., Bromley, Kent.*

Stachys Michx.





GLOXINIA WILSONII.

"Come gentle air! and while the thickets bloom,
Convey the jasmine's breath divine,
Convey the woodbine's rich perfume,
Nor spare the sweet-leaved eglantine,
By sweet-briar hedges, bathed in dew,
Let me my wholesome path pursue."

GLOXINIA WILSONII.—This magnificent variety was raised in the garden of Charles Wilson, Esq., of Allerton, near Liverpool, from seed obtained from *G. albo-sanguinea*, but what it had been impregnated by we are not informed. The stock of it is now in the possession of Mr. George Davies, Stanley and Green-lane Nurseries, Old Swan, Liverpool, who sent us the drawing which Mr. Wilson had had taken at a time when its flowers, "though these are of a magnificent size," were not as large as others that were subsequently produced, being, as Mr. Davies informs us, of the extraordinary size of six inches long.

It is of vigorous habit, and a free bloomer. All the Gloxinias are handsome, some of them particularly so, and highly ornamental; but the variety now figured stands pre-eminently majestic above all others which we have seen, "although there now are one hundred and forty kinds," and ought to be in *every collection*.

Having in our last month's Number an excellent article on the management of Gloxinias, by Mr. Burley, it is quite unnecessary we should here do more than refer our readers to it for instruction thereon. Their ease in cultivation, profusion of flowers, highly ornamental for stove or greenhouse, and the long period of blooming, alike entitle them to a place in every one.

NOTES ON NEW OR RARE PLANTS.

BRILLANTaisia OWARIENSIS.—Natural order, Acanthaceæ. It is a soft-stemmed under-shrub, a native of Sierra Leone. It has bloomed in the stove in the Apothecaries' Garden at Chelsea. It grows about four feet high, robust, much like one of the large-leaved *Salvias*. The flowers are borne in large terminal panicles, of a sage-like form, nearly two inches across the face, of a deep purple colour. It bloomed in profusion in the stove last March, and was very ornamental. (Figured in the *Botanical Magazine*, 4717.)

EPISCIA MELITTIFOLIA. Natural order, Gesnericæ, (Synonyme, *Besleria melittæfolia*.) It was sent to the Royal Gardens of Kew, by Dr. Imray, from Dominica. It is probably a native of the West Indies. The plant at Kew is about a foot high, robust, stem dark purple, leaves large, having sunk network-like veins at the surface. The flowers are produced at the axils of the upper leaves, each having a footstalk an inch and a half long, tube three parts of an inch long, yellow, tinged with red, and the limb (face of the flower) is fine parted, an inch across, of a dull-crimson colour. (Figured in the *Botanical Magazine*, 4720.)

RHODODENDRON DALHOUSIÆ.—This is the most magnificent of the Sikkim-Himalayan Rhododendrons. We gave a figure of it in a former Volume of this Magazine. It is a native of East Nepaul, Sikkim, and Bhotan, growing at elevations of from six to nine thousand feet, in humid (damp) forests. It is a straggling shrub, six to eight feet high, producing its flowers at the extremity of the branches, in terminal heads of from three to five blossoms. The flowers are very large, about five inches long and four across the mouth, somewhat resembling those of the White Lily of the gardens in form, and, like it, powerfully fragrant. In its native country and localities the shrub is often found growing upon the limbs of large trees, among moss, ferns, &c., similar to our stove Orchideous Epiphytes. It is in all situations and circumstances a magnificent plant. Mr. John Laing, gardener to the Earl of Rosslyn, Desart-house, Kirkaldy, North Britain, has the honour of having, by very skilful management, been the first person to flower this noble species in Great Britain, and most probably in Europe. It bloomed at Dysart Gardens in March, 1853, and a blooming specimen was sent to Sir W. J. Hooker; and a figure is given in the *Botanical Magazine* for June. The following particulars contain the interesting process of Mr. Laing's success:

"In January, 1852, I selected from our woods a vigorous plant of *Rhododendron Ponticum*, with a clean straight stem, about six feet high, removing all the lateral branches, and potting it in an eight-inch pot. About the end of January it was placed in the stove, where it was soon after inarched with *R. Dalhousiæ*. As the young shoot of the latter began to harden, it was gradually cut through till separated, and the plant was removed to a cool greenhouse to rest. It very soon showed symptoms of making another growth, and it was transferred to the stove to ripen its wood, preparatory to its being again put into a cool house, as the shoot ripened. Here it did not remain long before it

made further progress, and again required the heat of the stove to ripen its third growth. About the end of October, a flower-bud was formed, when water was gradually withheld until it was moderately dry at the roots, and the plant was removed to a cool greenhouse for the entire winter. About the third week in February, 1853, it was placed in the stove, and began to show colour on the 16th of this month (March). When the flowers first appeared, they were of a greenish colour, which gradually changed into a yellow, deepening to pale-orange, which also has died away, leaving it almost a pure white. I may also state that the plant has never been exposed out of doors; had it been so, the rusty colour on the upper surface of the leaf would have very likely been removed. The bark on the first shoot or growth is of a brown colour; but the other two growths are yet green." The above particulars are here given, that any of our readers having this or other of these fine *Rhododendrons*, may see what process is likely to promote an early blooming of such as hitherto have not shown signs of flowering.

RHODODENDRON GLAUCUM.—Another of the Sikkim Himalayan introductions by Dr. Hooker, a plant, a foot high, bloomed in April, in the cool greenhouse in the Royal Gardens of Kew; others, however, thrive well in the open ground, but have not yet bloomed. The leaves are from three to four inches long, and three parts of an inch broad at the widest part. The flowers are, when in bud, of a deep red; when expanded, of a beautiful rose-colour: each being bell-shaped, about an inch long, and the same across the mouth. They are produced in terminal umbels of four or five in each. It is very neat and beautiful, and in its native hills grows to an erect shrub two feet in height. (Figured in *Botanical Magazine*, 4721.)

SKIMMIA JAPONICA.—Native of Japan, growing, as Dr. Siebold informs us, upon the hills, forming a handsome shrub of from three to four feet high. The leaves, or wood, if bruised, are very aromatic; and the flowers have a delicious fragrance. It is an evergreen, smooth, and the leaves are shining, thick, about five inches long, oblong, tapering at each end, and an inch and a half broad at the widest part. The flowers are borne in terminal, paniced heads, numerous, and close. Each blossom is about half an inch across, white. The spiked-head of the flower is three inches long and two through it, and is succeeded with very beautiful heads of scarlet fruits, which are highly ornamental. Each berry, globe-shaped, as large as a good-sized marrow pea. It proves to be quite hardy, having stood out at Bagshot during the last two winters, without sustaining the least injury. It merits a place in every shrubbery, or in the greenhouse, entrance-hall, &c. (Figured in *Botanical Magazine*, 4719.)

CISSUS DISCOLOR.—In our last year's Volume we noticed this charming climbing-plant; but its exquisitely handsome foliage induces us to introduce it again to the notice of our readers. It is a shrubby plant, of medium growth. The leaves are of an oblong-oval form, each being from four to five inches long. The upper side is of a green, with the veins of a rosy-red tinge, and the spaces between the veins are beautifully marbled, or embossed at the centre with silvery white. The

edge of the leaf has a narrow margin of rosy-red. The underside of the leaves is of a rosy-crimson, with red veins. It grows very freely, and is readily cultivated and increased. It appears very likely to succeed well, too, in the greenhouse, if it can have the warmest part in winter, or be kept in similar protection. In different atmospheres, the hues of colouring of the leaves is very strikingly variable, in proportion to the extremes of temperature. Every floral establishment, public or private, ought to contain one or more of this beautiful plant. It may be procured, too, at a small cost. It is a neat plant for training round a wire frame, or to a pillar. (Figured in Van Houtte's *Flore*.)

APHELANDRA SQUARROSA, VARIETY CITRINA.—This is the plant recently exhibited at the Chiswick and Regent's-park shows, by Mr. Van Houtte. It is one of the soft-wooded plants, similar to the *Justicia carnea*, or others, in habit. The leaves are large, of a rich green, each vein having an edging of pure white, the contrast being very strikingly pretty. The flowers are *Justicia*-like in form, borne in terminal, large, spiked-heads, of a beautiful citron-yellow. It is as free in culture and increase as our other *Aphelandras* are. (Figured in Van Houtte's *Flore des Serres*.)

MAGNOLIA GRANDIFLORA VARIEGATA.—This very superb variety has leaves of the size of the *M. grandiflora*, with those noble leaves edged and striped with creamy-white. It is a valuable acquisition, and plants are offered to the public, by M. Oudin and Son, of Lisieux, who also possess *SYRINGA JOSIKEYA VARIEGATA*, the fine foliage of which is green and white; it merits a place in every shrubbery.

CAMELLIA ROULII.—A fine, large, *globular-shaped* flower, of a creamy-yellow colour, edged with rosy-carmine. New and very handsome.

CAMELLIA CHATEAUBRIAND.—Imbricate form, a bright carmine, with each petal edged with white. Very handsome.

C. COUNTESS DE CHAMBORD.—Imbricate form, a delicate rose, petals *transparent*, very superb.

C. ELLEN LENNING.—The flowers are very large, *Ranunculus*-formed, a delicate rose, shaded with rich purple. Very superb.

C. CAPTAIN MACKALL.—The flowers are very large, *Ranunculus*-formed, and of a shining rich purple-crimson colour, with irregular patches of white. Very handsome.

CHRYSANTHEMUM, Queen of the Chrysanthemums.—The flowers are of a perfect *globe* shape, very large, and the petals rose on one side and purple the other. Superb.

HELIOTROPIMUM MADAME BOUCHARLET.—A vigorous-growing plant, having very large heads of flowers, of a bright violet, each blossom having a green and yellow centre. A very superior variety.

H. LOUIS CHAIX.—Vigorous plant, large heads of flowers; lilac, with a pure white eye. Very handsome.

NEW AND FANCY PELARGONIUMS.

MAGNUM BONUM.—Upper petals crimson-purple, lower petals pencilled and shaded with crimson-violet. Form and substance good.

DARLING.—Upper petals rosy-lilac, lower petals light, with rosy-lilac markings. An abundant bloomer, and good grower.

RESPLENDENS.—A brilliant scarlet-crimson flower; lower petals light, with markings of the same. A flower of good form, the most brilliant of its class.

GOLIAH.—The largest and most showy colour yet raised; upper petals rich mulberry-colour, shaded with violet; lower petals marked with the same colour, clear white throat. A delicate grower.

BARRIER.—Upper petals rich mulberry-colour, with a rich velvety texture; lower petals violet-crimson. Good grower, and free bloomer.

PRINCESS ALICE MAUDE.—Upper petals bright crimson, and margined with white; lower petals white, tinged with blush, fine form. An immense bloomer, and good grower. A great favourite.

DUCHESSE DE ORLEANS.—Upper petals bright rose; lower petals white, tinged with blush. Fine form and good habit. Free bloomer.

FANCY GERANIUMS.

ADVANCER.—Upper petals mulberry, with a slight light margin; lower petals blush, pencilled with purplish-crimson.

BEAUTY OF ST. JOHN'S WOOD.—Upper petals bright violet-carmine, with a regular clear white margin; a regular belting of carmine runs through the under petals. Good truss, and an excellent grower.

GIPSY QUEEN.—Upper petals rich plum-colour, shaded with mulberry, and light lilac margin; lower petals white, spotted, and pencilled with purple.

LADY DOWNES.—Rosy crimson, edged with white; lower petals violet-rose, white throat, and good truss.

LANTANA MARQUIS DE SAVORITA.—The plant is of dwarfish habit, and the flowers are in large heads, of a beautiful orange-yellow, which changes to a rosy salmon, giving a pretty contrast. A superb variety.

L. ALBA-GRANDIFLORA.—The habit of the plant is very similar to the previous one. The flowers are produced in large heads, a pure white with a yellow eye. Very pretty.

L. LUTEA SUPERBA.—The flowers are large, and in large heads, of a rich citron-yellow.

L. FLAVICOMA.—The flowers are of a rich, clear yellow, rising very full at the crown of the corymbose head. The above new Lantanas are valuable acquisitions both for indoors and the beds outdoors in summer, and can be procured at a very reasonable price.

PÆNIA ARBOREA-VARIETY ALBA-LILACINA.—This new tree, Pœnia, has large flowers, white and violet, with the centre of violet-carmine. Very pretty.

P. MADAME DE VATRY.—Flowers very large, and of a perfect globe shape, and of a satin-rose colour. Very beautiful, and probably the best of all the P. arborea section.

P. ALBIFLORA GLOBOSA.—This is one of the herbaceous kind. The flowers are large and of a perfect globe shape, rose with white stripes. Very handsome.

NEW PLANTS AT THE RECENT EXHIBITIONS IN LONDON.

IXORA.—A new species, by Mr. Veitch. It is in the way of *I. Javanica*; but the foliage and flowers are larger.

PHILESIA BUXIFOLIA, by Mr. Veitch.—It is a hardy, dwarf, ever-green shrub, from Patagonia. It has the appearance of a bush of *Andromeda grandiflora*, the foliage narrow. The flowers are of a rosy-pink colour, each blossom two inches long and an inch across the mouth, somewhat in the form of a small blossom of *Lapagexia rosea*. It is very handsome, and a valuable acquisition.

PÆNIA MONTANA LILICINA.—This very magnificent flowering plant is growing in the Horticultural Society's Garden. Each flower is a foot across, lilac with a dark centre. It is one, we believe, introduced by the Society from China.

AZALEA PERRYANA, by Mr. Kinghorn.—Flowers a fine orange-scarlet, large, of good substance and form.

AZALEA PURPUREA SUPERBA.—Flowers very large, purple, with crimson spots, and very showy.

AZALEA STRIATA FORMOSISSIMA.—Flowers white, spotted numerous, and striped with lilac. Very pretty.

NEW, OR OTHER HANDSOME FLOWERING PLANTS IN BLOOM IN THE ROYAL GARDENS OF KEW.

GREENHOUSE. GLOXINIA RUBRA-VIOLACEA.—The outside of the flower a rosy-red. Inside a rich-violet, edged with purple.

G. MARIA VAN HAUTTE.—Outside white, tinged with carmine. Inside white, with the lower portion (by some persons termed the *throat*, and which we shall use in our further descriptions of these flowers), of a rich deep crimson. Fine form, and handsome.

G. FRANKLIN.—Outside white. Inside white, with the throat of blue, and a cream-coloured stripe up the middle.

G. JOSCHTII.—Outside bluish. Inside white, with a crimson-velvet throat, edged with carmine. Medium size, and a very free bloomer.

G. VICTORIA REGINA.—Outside white, tinged with lilac. Inside white, with the throat of a deep velvet, edged with blue. Very handsome.

G. SOUVENIR DE BORDEAUX.—Pink, with a white throat. Very neat.

G. BARON DE VRIERE.—Outside creamy-white. Inside white, with the throat a lavender-colour, having a white stripe up the middle. Large and pretty.

G. MADAME MALIBRAN.—Rose, with a violet throat.

G. WORTLEYANA.—Outside white. Inside white, with the throat light blue and a broad white stripe, spotted with black up the middle. Very beautiful.

G. REINE DES BELGES.—Outside pretty bluish. Inside white. Fine form, and very pretty.

G. JOSEPHINE BOUCHIER.—Outside white. Inside white, with a blue throat, having a stripe of sulphur up the middle. Very pretty.

G. SPECTABILIS.—A slate-blue colour, with a deep violet-blue throat. Fine and pretty.

G. PETONIANA.—Outside white, with blush tinge. Inside white, with a crimson throat.

G. COMTESSE BARRATT.—Light lavender, with a white throat, edged with dark blue. Fine form, medium-sized, and very neat.

G. MARGINATA.—White, with the throat of purple, edged with rich blue. Fine form.

G. MADAME CHANTU.—White, having the throat a rich crimson, with cream-coloured stripe up the middle. Very neat.

DATURA PLENO-FLAVA.—The plant is of medium growth, shrubby, branching, and the flowers, too, of medium size, double, of a pale-yellow colour. Very pretty, and will be a nice contrast with the *D. Knightii*, with its double white blossoms.

MAHERNIA VESTITA.—It forms a neat dwarf bush, with pretty fine cut foliage. The flowers are drooping, about half an inch across, of a rich orange-colour, very pretty, and borne in profusion. It merits a place in every greenhouse.

LEPTOSPERMUM BULLATUM.—A neat, stiff, bushy shrub, having neat *heath-like* foliage, and nearly covered with its pure white flowers. Each blossom is about three parts of an inch across. It is very neat and ornamental, and worth a place in every greenhouse.

CROTOLARIA PURPUREA.—The plant, when its shoots are stopped, forms a neat bush, and in proportion to its branches are its large spiked heads of pea-like rosy-purple flowers. It is very neat and ornamental.

AZALEA ARDENS.—The flowers of good shape and substance, of a fiery orange-red, produced in vast profusion, and exceedingly ornamental.

AZALEA ALBA-MAGNA.—Flowers very large, fine form, and good substance.

GEUM AURANTIACUM.—Flowers two inches across, of a fine orange-scarlet colour. It is said to have been raised from *G. coccineum*, impregnated by one of the large flowered *Potentillas*. Is a very handsome hardy herbaceous plant; we recently obtained it.

In our next we shall give a list of the best flowering hardy herbaceous plants and shrubs.

CULTURE OF THE EPACRIS,

(With a List of a few of the best and most distinct.)

BY MR. JOHN BURLEY, OF WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON.

THIS charming family of plants is known by most of the readers of your *Cabinet*, and is, I am sure, admired by all who grow them for their very great variety of colours, free blooming, when grown to perfection, and the time of year they are in bloom. I know of no better or more beautiful greenhouse plants than they are, with their lively-coloured flowers, for winter ornament; and when properly managed, each plant will produce its hundreds of pretty tube-shaped

flowers, and continue in bloom for a long time; in fact, a collection of these plants, mixed with *Primulas*, *Ericas*, *Hyacinths*, and other spring blooming plants, have a charming and gay appearance in either greenhouse, conservatory, or sitting-room, and contribute to brighten the dulness of the season when gardening in general is without attraction. No doubt many of the readers of the *Cabinet* have a few of these charming plants; I shall therefore give for their guide, in managing them successfully, the soil best suitable for their growth, the time of potting, and such other information required to enable the cultivator to grow them to that perfection that they deserve; also, for those who would wish to form a collection, I have annexed a list of the best, with the colours. **SOIL**; the most suitable for their growth is good brown peat, with silver sand added to it to keep it free; the peat must be broken rather small for the first potting, increasing its roughness as the plants increase in growth; for example, supposing a plant in a 32-sized pot requires repotting, the peat should be broken in pieces, about the size of a filbert-nut, using a moderate sprinkling of sand, and let it be well mixed; then have ready a 24-sized pot, perfectly clean and well drained, placing over the hole in the bottom of the pot a large crock, and place over them about a half-inch of smaller ones; then place a layer of the roughest of the peat over the drainage to keep it free, as it would be liable to be choked by frequent waterings; turn the plant out of the pot, and remove any old loose soil that can be taken away without disturbing the roots; place it in the pot, and in potting press the mould moderately tight, and leave about a quarter of an inch clear inside the rim, to admit of liberal watering when dry. After flowering, the plants should be cut back; that is, "the long flowering shoots should be shortened as far back as where they pushed from the last season." They should then be removed into a close frame, and be kept shaded until they begin to break afresh. Where stove-heat can be had, they would be helped to break by being placed in it for about "a fortnight." When sufficiently furnished with young shoots, they should be placed in a cool frame, giving a little air, so as to gradually harden them. When the new shoots are about two to three inches long, the plants should be repotted, as directed before, and after potting they should be kept shaded for a day or two, to prevent the young shoots from flagging, which after potting they are apt to do, especially when the old soil has been removed rather close from the roots. After a short time, and as the season advances, they must be removed from the frame and placed out of doors in a shady spot. Under a north aspected wall will do well for this purpose. Let a little coal-ashes be spread over the ground, and the plants every day arranged on it. They should remain here during the summer season, and all the care they will require will be to see they do not lack a due supply of water, and the soil on the surface of the pot be stirred a little occasionally, to keep it from becoming green. In October the plants must be removed from their summer quarters, the pots washed, and plants cleaned, then place them in the greenhouse for winter, where they may be mixed with other plants, such as *Camellias*, *Azaleas*, and such like plants. The only heat they will require in winter is "just

enough to keep out frost ;" in fact, in all seasons of their growth, the more air and light they have the better for the plants, and the more robust their growth. By following the above routine of treatment I am quite sure that fine, healthy, vigorous plants will be produced, much better than we are accustomed at times to see them ; viz., straggling naked plants, which at the blooming season only produce a flower here and there. It must have been noticed at different places that *Epacris* are to be seen, above all others, of a meagre and sickly appearance, which is occasioned from a neglect in being duly potted. If any of the readers of this have some such plants, presenting an appearance such as I have described, let them be turned out, repotted in the compost, *rough*, as recommended, shorten the branches, and they will find that the plant, or plants, will soon improve. The yellow tops of the shoots is occasioned by using "fine mould" in potting instead of "rough." When potted in fine mould the soil, by frequent waterings, gets hard, and the plants at once begin to look bad. They are easily propagated by cuttings taken from *half-ripened* wood, and inserted in silver sand, placed in a warm house, and covered with a bell-glass. The pot containing the cuttings should be half filled with draining crocks, and filled to within two inches of the top with rough soil, then one inch of finely sifted peat, and one inch of silver sand.

E. miniata, rich salmon pink, shading up to white at the tip.

„ *alba-odorata*, a white sweet-scented variety ; close habit.

„ *hyacinthiflora*, a deep blush flower, erect habit ; very free bloomer.

„ *impressa rubra*, dark rose-coloured flower, profuse bloomer.

„ *hyacinthiflora candidissima*, the best pure white.

„ *impressa-alba*, a good white ; profuse bloomer.

„ *ardentissima*, a deep rosy purple ; free bloomer.

„ *splendida*, an orange-scarlet ; very fine and free bloomer.

„ *Tauntoniensis*, a deep rose, a profuse bloomer.

„ *rubella*, very bright pink, good colour, very fine.

„ *coccinia*, the best scarlet ; habit rather indifferent.

„ *magnifica*, deep blush, short tube, free bloomer.

„ *bride*, a very fine white ; good habit, and free bloomer.

„ *grandiflora*, long rosy-purple tube, shading off to white.

„ *variegata*, purplish colour, shading off to white.

„ *velicata*, light rosy-pink, white tips.

„ *sanguinea*, very bright red, free bloomer.

„ *impressa candida compacta*, a very fine close growing white, abundant bloomer, and good formed flower.

The above eighteen kinds may be purchased at trifling prices, as low as 2s. to 3s. each. They would form a good small collection. When a larger collection is required, there is an ample assortment of other beautiful ones ; for there now are upwards of sixty species and varieties cultivated in our own country.

REMARKS ON THE DAPHNE.

BY MR. P. MACKENZIE, OF WEST PLEAN, NORTH BRITAIN.

THERE are some species of *Daphne* that have long been favourites with the lovers of garden flowers, and although some of them are

natives of Britain, there would be no harm to see them more plentifully grown throughout the country. Our cold spring, this season, has kept the *DAPHNE MEZEREUM* long in flower, although not backward in taking the lead among spring flowers with its bright blossoms of red and white.

We are told that it is a native in the woods of some of the counties of England, although it was introduced from Sweden into the English garden many years before a better acquaintance with our native botany had led to the knowledge that it belonged to England's flora.

Nor is it like many plants confined to a small spot on the surface of earth, for we are told that it grows in woods, throughout Europe, from the forests of the cold Lapland, where it looks gay among the dark firs and the stunted birch-trees, to the richly-decked groves of the bright islands of the Mediterranean Sea. Its sweet-scented flowers are out before the leaves appear, which has been noticed by Cowper—

“ Mezereum, too,
Though leafless, well attired and thick beset
With blushing leaves investing every spring.”

Almost every part of the *Mezereum* is acrid; its berries are highly poisonous. Dr. Thornton records the case of his young sister, who died in consequence of eating but a small number of these bright fruits; yet a writer remarks, “poisonous as they are to men and animals in general, the Great Creator has adapted them to the use of some of his creatures, for to the birds they are palatable and nourishing, and the thrush and the blackbird search for them eagerly, and haunt the neighbouring trees and hedges where these bushes abound.”

The *DAPHNE LAUREOLE* is more common in our shrubberies, and sometimes they will make their appearance in places in a way not easily explained. We knew a place where they were never known to have been planted, and yet one season a considerable number of young plants made their appearance in a certain part of the shrubbery, not only where the ground was dug, but also among the grass near where the borders were dug. Its mode of growth has been compared to that of the palm-tree, with its circular rows of leaves around its stem; the smell of its pale yellowish-drooping flowers, which hang in clusters under its dark-glossy leaves, is not unpleasant. Like the *Mezereum*, it has an arid property, and its bluish-black berries are poisonous; it is also an evergreen, and looks as bright in the winter as when the summer sun shines upon it.

The *Daphne cneorum*, or garland flowers, ought to have a place in every flower-garden or shrubbery where it can be grown; it is now a hundred years since it was introduced to this country, and the wonder is that such sweet-smelling flowers in the month of May are not found in every garden. We had a plant of it this year with upwards of 400 heads of blossoms, and each head averaging twenty flowers; now 8,000 flowers breathing sweetness from a low trailing plant in a summer morning, was truly delightful. It will not grow in every kind of soil and situation; but what has been denominated, “one of the most lovely, and sweetly-perfumed plants in the world,” ought to have a little attention bestowed

upon it. The plant that flowered so well grows upon a dry peaty bank, facing the south.

A correspondent in the *Gardener's Chronicle*, says that the most successful way of cultivating the above fragrant herby *Daphne*, is to plant it in an exposed airy dry situation, in peat and road sand; if the ground is naturally low and wet, a barrowful of broken tiles, stones, &c., must be put into the hole, and on the top of them pieces of turf be placed, the grass-side downwards. Then put on the compost, chopped fine, but not sifted. Under this treatment every shoot will send out roots, and bloom freely.

THE BEAUTY OF THE WEeping BIRCH.

BY MR. P. MACKENZIE, OF WEST FLEAN, NORTH BRITAIN.

At this season the Weeping Birch is a great ornament to our woods and pleasure-grounds: it would do no harm if the number were increased in many places where less hardy trees will not thrive. The fragrant Birk of Banus is a favourite with most people; and though only cultivated for ornament, it might be more common than it is, since it is both cheap and hardy. This elegantly-pendulous tree, "arching like a fountain shower," is beautifully described by Wordsworth:

"Light birch aloft upon the horizon's edge,
Transparent texture framing in the east
A veil of glory for the ascending moon."

It has also been described as the most beautiful of forest trees:

"——its slender tress,
So beautifully fair,
As graceful in its loveliness
As maiden's flowing hair."

The Lady of the Woods, intimately connected as it is with the literary history and ceremonies civil and religious of earlier times, is still more forcibly associated in our memories with the bright, happy, buoyant days of youth, with scenes of exquisite, but evanescent mingled pains and pleasures, when to our minds "life and its thousand joys seemed but as one long summer day." Another remarks, that the sight of a Birch-tree offers a vast subject of interesting meditations, and happy the man to whom its flexible pendant branches do not recal to mind that to him they were formerly instruments of punishment.

TO INDUCE THE MITRARIA COCCINEA TO BLOOM FREELY.

BY W. D., A BRIDGEWATERMAN, AT LEEDS.

SEEING in the April Number of this Magazine (page 96), that M. R. M., of Bridgewater, solicits information relative to the treatment of this most beautiful flowering plant, so as to have it blossom freely, and

no compliance with the request appearing in either May or June Numbers, I venture to forward a few particulars of the mode of treatment I practised with the *Mitraria coccinea*, with "very great success."

Three years ago I procured a small plant, re-potted it into a size-larger pot, and placed it in a cool greenhouse, where it soon began to grow vigorously, and quickly filled the pot (six inches across) with roots. About the middle of July I gave it another pot, one size larger, and I put a small stick in the centre, to which I tied up the strongest branch, and cut off the lead of each of the other shoots, so that by the end of summer I had a neat little, close-grown pyramid-shaped plant. The following spring it produced a fair portion of its large, brilliant, scarlet, pendent flowers. The second season I gave it a liberal shift immediately after it had done blooming, and cut in the shoots a little, and still keeping it in the pyramidal form. Last year it was a perfect object of splendour, and was much admired by every one who saw it. The same treatment was again followed; viz., one shift with a plenty of lopping the leads; and it is now in splendid bloom, and will be for a long time to come, it being one of those useful plants that gives us a long succession of flowers.

The soil I grow it in consists of two parts loam (not common garden soil, but loam cut from a pasture field, about three inches thick, and laid up for twelve months), and one part of peat, with a liberal portion of silver sand, also a sprinkling of bits of charcoal; the whole well mixed together, and having a free drainage. It is grown in a house along with *Epacris*, *Pimeleas*, *Eriostemon*, &c., and ranks in beauty and splendour with those, or any inmates of the house.

If M. R. M. will treat his *Mitraria* as above detailed, he will have one of the finest objects he can wish for as an ornamental greenhouse plant. I may mention that my plant is now three feet six inches high, and three feet through, forming a perfect gem. To sum up the whole, the plant wants a great deal of stopping of its leads *while growing*, for it is on the *little lateral shoots* that the flowers are produced. If it is allowed to make *long shoots*, it will but have a few flowers, if any. It merits a place in every greenhouse.

REMARKS ON SUNDRY MATTERS CONNECTED WITH THE CULTIVATION OF FLOWERS.

BY MR. P. MACKENZIE, WEST PLEAN, NORTH BRITAIN.

MEDICAL men inform us that the use of tobacco should be at once discontinued, because it is undoubtedly injurious to all persons in a greater or less degree, and with some constitutions it is so to a very important extent; yet with all their warnings many will use it, although they are sensible that it is hurtful to them. There are many smokers keen florists, and many of their plants, especially house plants, are much injured by the green-fly; we would therefore advise them to make the most of their smoke, and keep in subjection those pests that are troublesome to their favourite roses and pelargoniums.

We know an individual who has a small greenhouse, which he, in a great measure, looks after without much assistance from others, and instead of annoying others in his house with the smoke from his pipe, he sits among his collection of plants, and derives a pleasure in seeing the smoke ascending in beautiful curls among the green foliage of his favourites, and disturbing the happiness of the small insects that lodge among the leaves and branches. The green-fly upon plants in windows may be displaced in a similar way by those who can use the pipe; but at the same time, we would not recommend smoking merely for the purpose of keeping plants clean.

One writing on insects and diseases of house plants, remarks, that plants in rooms, especially Geraniums and Roses, are very likely to be attacked by aphides or green-fly; these may be easily removed by tobacco water. Camphorated water may be used by those who dislike the smell of tobacco. Mildew occasionally, though rarely, attacks house plants. It appears like a white powder, and is supposed to consist of minute fungi; but these fungi are not the original disease, but its consequence, and their appearance shows that the plant has been in impure air, or otherwise imperfectly treated. Sulphur or camphor will effectually remove this mildew and a scaly insect of the coccus tribe, which appears occasionally on Oranges, Camellias, and similar plants, may be removed by a sponge and water. Many persons have a dislike to plants in houses as being unhealthy; and as this dislike is in a great measure groundless, we may notice it. Dr. Priestley was the first to show that the leaves of plants absorb carbonic acid gas by their upper surface, and give out oxygen by their under surface, thereby tending to purify the air in as far as animal life is concerned, because carbonic acid gas is pernicious to animals, and oxygen is what that life requires. It is in the light, however, that these operations are carried on, for in the dark plants give out carbon, and this may be one reason why plants grown in the dark have little or no charcoal in their substance. It does not appear, however, that any of the scentless products given out by plants are injurious to human beings; because those who live among accumulated plants are not less healthy than others, though many persons feel dislike, and even pain from the odours of particular plants, in a way not easily accounted for. On the continent in general, and in France and Germany in particular, flowers of all sorts, but particularly the most fragrant, are admitted into the saloons, chambers, and even bed-rooms of people of all classes; and they rather complain of the difficulty of procuring them in sufficient abundance than of any ill effects arising from their presence. The flowers most in demand for the chambers of the French and Germans are Oranges, Jasmynes, Carnations, Honeysuckles, Mignonette, Olive, Rocket, Rose, Violet, Wall-flower, Rosemary, Stocks, Lavendar, Oleander, Hyacinth, Lilac, Syringa, Heliotrope, Narcissus, &c., all sweet-smelling flowers, and these they indulge in to a very considerable extent. We may safely conclude, then, that plants admitted into rooms to the extent that they are, can produce no effect injurious to the health of persons in general, but, on the contrary, will afford amusement to the mind and exercise to the body, both of which are so necessary towards the enjoyment of good

health. The mind will be agreeably exercised in contemplating the beauty of the flowers, but much more so still if their respective parts, natures, and structures in a botanical, or physiological point of view, be at the same time attended to, and an agreeable and rational exercise will be provided for the body of the proprietor, if the softer sex take the entire management of her little window garden into her own hands.

ON THE CULTIVATION OF EXOTIC FRUITS.

BY P. WALLACE, CHISWICK-HOUSE.

(An extract from the *Journal of the Horticultural Society*, Part i. vol. viii., Jan. 1853. Many of our readers have applied to us for information upon the culture of the Orange-tree, &c., which induces us to insert the following excellent details.)—EDITOR.

WHEN we consider the success which attended the covering in of the large space of ground occupied by the Exhibition building of 1851, there can be little doubt that a new era has commenced in the construction of large glass-houses for horticultural purposes, and that in future the erection of such buildings will become a matter of no great difficulty, and, comparatively speaking, of little expense. Such being the case, I would therefore direct the attention of gardeners and their employers to a more extensive cultivation of exotic fruits. Although great advances have already been made in this department of gardening, yet, looking at the variety of exotic fruits that have come under my notice both at home and abroad, I feel persuaded that their culture can be carried much farther than it ever yet has been, and at the same time be conducted at much less expense, adding to the dessert a variety of handsome and delicious fruits, which are now only known by reputation, or procured with difficulty from foreign countries.

The fruits I would more especially treat of in this paper are such as can be cultivated in a temperate house or conservatory. A proper and good style of building might be that represented by the flat ridge and furrow-roofed Lily-house at Chatsworth (the house "that gave birth to the Crystal Palace"), and a very similar model greenhouse, erected by Messrs. Hartley in the Society's Garden at Chiswick. In extent it might be from a Crystal Palace down to a nice snug conservatory, according to the desire and wants of the establishment, bearing in mind that all the light and air that can be obtained will be requisite for the production and proper ripening of such fruits as the China, Lisbon, Maltese, and Tangerine Oranges, Sweet Limes, and Lemons, the Loquat, Guavas, the Longan, the Alligator Pear, the Custard Apple, Pomegranates, and many others of less importance, yet creating interest in a collection of this kind. The different kinds of *Granadillas* might be trained up the columns and supports of the building, provided they did not interfere with the amount of light required, or otherwise incommode more valuable plants.

I have seen all the above-named trees bearing and perfecting their fruit in the temperate Island of St. Michael, whose only advantage in point of climate over that of our own is its mild winter. From this I

conclude they might all be grown with the greatest success in a temperate house in England, the house being supplied with sufficient heating apparatus to exclude the chill of winter.

I might here state, by way of inducement to cultivate the more useful Orange-trees, especially the Tangerine, in England, that the trees in the countries from whence we derive our principal supplies are infested by a kind of *Coccus*, which is annually destroying acres of Orange-gardens, and rendering the fruit of others worthless. We have heard of the sad effects of the vine-blight in France, Spain, Portugal, and the Island of Madeira. The *Coccus* might as easily extend to the other countries from which the rest of our Oranges come, and thus cause a scarcity of this deservedly much-esteemed fruit. Even at the present time I believe that, owing to the small quantity sent to this country, the Tangerine Orange could be produced at a less cost than that for which they can be bought in our markets. I would recommend those who may be desirous of cultivating the fruits I have enumerated to have borders formed for their reception, as the success likely to attend their culture will be greater if planted in the open soil than it would be in tubs or boxes. By tasteful arrangement, too, a house of exotic fruits could be made at once useful and highly enjoyable. The borders must not be too deep; from two to three feet will be ample, and good drainage will be requisite.

A suitable soil for forming borders would be two-thirds strong turfy loam, and one-third old and well decayed manure, liberally mixed with a quantity of brickbats and broken sandstone, which would permit superabundant water to pass off and maintain a healthy medium for the roots. It has been customary for Orange-growers to use strong and powerful manures, as garbage and other decayed animal substances. The late Mr. Ayres, a most successful cultivator of Citronworts, employed such stimulants at Shipley Hall, in Derbyshire, but then his trees were in tubs, and consequently such applications were necessary. Growing in the natural way, however, in borders, the use of garbage, &c., is not required, and the frequent and troublesome business of re-tubbing is thus done away with. It has also been a long-acknowledged axiom that Orangeries, to grow fine trees, must be heavy, shady, and sombre-looking buildings, inside and out. In the present advanced state of gardening, however, but few illustrations will be required, I imagine, to subvert this notion. Look, for instance, at the sunny climes and cloudless skies in countries where Orange-trees succeed best. I was in Lisbon a fortnight in May, 1849, and I never once during my stay saw a cloud on the face of the sun. I was informed that the whole summer usually passed away in the same manner, and that the winter there was equally remarkable for its clear and cloudless sky. When Orange-trees were first introduced to the Island of St. Michael, it was found absolutely necessary to plant quicker growing trees around them, to shelter them from the rude winds of the Atlantic. To such an extent was this planting of shelter carried and persevered in, that that which was meant for and really would have been a benefit, became an evil. The Orange-trees in the over-sheltered gardens grew fast and luxuriantly, but the produce was inferior in quality and quantity to that

of gardens on the sides of mountains, where it was found impossible to exclude sunlight and air. It was in over-sheltered gardens where the hordes of *Coccus* first found a stronghold and commenced their attack on the wealth of the Azores; and such was the natural indolence of the proprietors, that they calmly watched the onward progress of the enemy destroying their property, without even making an effort to stop its career. It was with difficulty that English gardeners persuaded them of the cause of the evil, by pointing out Orange-trees free from the pest in more exposed situations. So many dear associations were connected with shelters, that it almost amounted to sacrilege to cut them down. At length, however, one by one they gave way; an onslaught was made on those least required, and the advantage derived was soon perceptible. In the gardens infested by these destructive insects their progress was checked, and the fruit of others was so much improved by the free admission of light and air, that their value was materially increased. Facts like these, therefore, will surely go far to convince reasonable people that all the light and air that can be had is required to produce Oranges in perfection under artificial treatment in this country.

The operation of planting will require a good deal of attention, as Orange-trees, when deeply planted, are subject to a kind of canker, which originates at the base of the stem; and though it works its way slowly, eventually destroys the plants. In order to avoid this evil it will be well to raise the soil where the trees are to be planted a little higher than the general level of the border, and this will afterwards admit of top-dressings to renovate the soil when exhausted, without there being any danger of too deeply burying the stems. Another important point will be to select strong, healthy, and well-established plants, particularly of the more tender kinds, for on the choosing strong plants success in a great measure depends. I have seen the bad effects of planting small and weakly trees in large houses. Time after time they have died, and hopes of the desired plant ever doing well despaired of, till at length some well-established specimen having been procured, the object aimed at was attained.

In order to encourage the growth of a house of young trees, so as to have luxuriant and fine-looking specimens, the temperature may be extended a little beyond what will be required when the plants come into a bearing state; yet any additional fire-heat beyond 64° must be applied with a sparing hand, as anything approaching forcing will be injurious.

In a house of this kind the temperature should never be below 50°, and, when rising in winter above 64°, if the external atmosphere be not too cold, admit air. With abundance of ventilation the summer temperature may range from 70° to 90°. Orange-trees, I infer (from their prolificacy and fine growth in the over-drained Island of St. Michael, where, sometimes in summer, rain does not fall for two or three months at a time), are not plants that require much water, especially at the roots; but it must be remembered that from the nightly heavy dews, and surrounding damp atmosphere, the trees are continually receiving an abundant quantity of moisture through the medium of their leaves. This, then, points out an important feature in the cultivation of exotic

fruits. Heavy rains fall in St. Michael's from October to March, but the ground is so full of cracks and crevices, that in a short time the water is drained off again, so that the roots may be said to be always in a moderately dry state. It must not, however, be inferred from the above statements that I would have the exotic-house without water; on the contrary, a plentiful supply must be had, and copious showers given to the plants with the engine, or, what would be better still, have the water laid on the house, with taps and hose at short distances, which would be a great saving of time and labour. From May to September the trees should be engined early in the morning and in the evening, avoiding throwing water on the plants in bloom; also admitting near such plants as much air as possible.

The borders must not be often watered; the best way will be to examine them by digging in different parts, and when they are found to want water, let it be well but gradually given, so that every part may receive nearly an equal quantity.

I need scarcely say that all kinds of fruit-trees require to be carefully pruned. In pruning Orange-trees thin out all superfluous branches, so as to admit light and air to the fruit. All the pruning they require should be effected immediately the fruit is gathered (which should be as soon as it is ripe, for the fruit remaining on the trees long after it is ripe is injurious to the plants), cutting out the weak sterile-looking and worst-ripened shoots, at the same time having an eye to the symmetry of the tree. Thinning the fruit is never practised in the Orange-gardens in Portugal; yet it would doubtless be advantageous to trees, when over-cropped, to remove some of the fruit; nevertheless, if they are healthy, they will not suffer from bearing abundant crops.

REVIEWS.

The Theory and Practice of Landscape Gardening. By Joshua Major, Knowsthorpe, near Leeds. London: Longman. 4to., pp. 204.

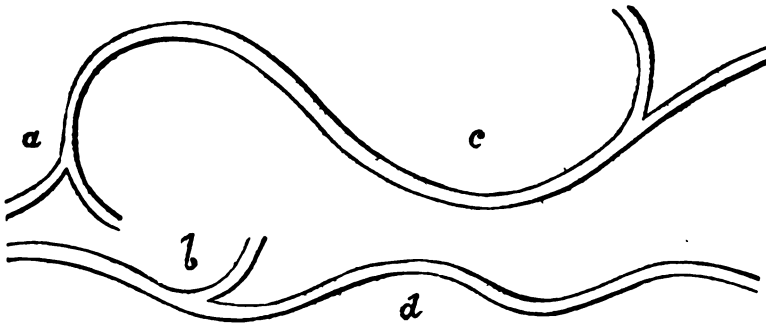
THE author is not professedly a botanist, therefore has not attempted to write a scientific botanical book. He is a justly-celebrated landscape gardener, therefore what he has written is in relation therewith, and is the result of many years' observations and extensive practical operations. The details are to the point in hand, clear, useful, and valuable, and are in many instances illustrated by engravings, accompanied with plans of grounds, gardens, &c. The author appears to have endeavoured to give us what is essential for practical purposes on all the subjects treated upon; and has aimed to have nothing in his treatise that would be superfluous. We do not rank this publication among the best previously out on this subject; but as a useful, clear, and practical work, we think it is superior to any of its predecessors. We give an extract:

"ON WALKS.—Dry gravel-walks are indispensable for the enjoyment of scenery in the pleasure-ground. We should therefore begin by forming a good, firm, straight walk through the whole length of the retired

fronts of the house, or the sides with which the carriage-entrance does not interfere. Such walk should not be less than nine or ten feet from the house, and exactly parallel with it, so as to afford room on the side next the house for vases, urns, basket-work, or other ornaments, to be placed in correspondence with what may be on the contrary side of the walk. This walk will also afford an important promenade when the weather is too doubtful to allow of a more distant stroll. The walks ancillary to the above should commence about the end of the building, bending very gradually from it—indeed almost imperceptibly, at least for a few yards. In all cases where it can be done, some part of the approach to the house-walk should be thrown sufficiently out to admit of the edifice being clearly seen in perspective, especially when the approach does not scan the house favourably: this is too often neglected. In many instances we see the beauties of costly edifices entirely lost to the observer, unless the house-walk is left, and the lawn traversed to view them. At the same time, it is of importance that the winding walk itself should be hid from the window view as soon as convenient; and in no case should the repose of the lawn in front of the house be injured by the walk passing through or round it. Moreover, it must be remembered that it is always in bad taste to look across two walks at one view; and, except in limited town gardens, or where the ground is sufficiently undulated to lose the farther walk from the windows; such an error is to be avoided.

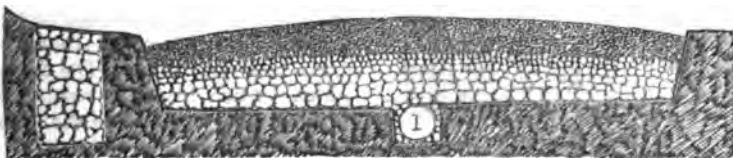
“In forming the width of the general or principal walks, we should have to be guided by the extent or magnitude of the place. A residence of great pretensions should have the terrace or house-walk from ten to fifteen feet wide; the principal winding walks from seven to nine feet wide; and the episodal walks, or those which divide the various compartments of the flower-garden, or others purposely set apart to afford scenes of themselves, of less dimensions.

“A moderate villa residence should have a house walk six or seven feet wide, and the principal winding walk about five or six feet. No pleasure-ground walks should be less than five feet wide; unless the house and grounds be very small indeed, or the grounds very precipitous, where a four or five feet walk would not only be more readily formed but would be more in character than one wider. In very abrupt rude situations, they should appear more like natural tracks. The principal walks uniting with the terrace-walk should become gradually narrower, until they soften imperceptibly into its proper width. But where a returning walk intersects the principal one, that would be a still better place for its change, provided the distance is not too great to continue the whole breadth. Walks in kept grounds of gentle undulations or of a level surface, should invariably be of long, gentle or graceful sweeps; not only because such are most beautiful and pleasing, but because they are less interrupting to the student, or reading pedestrian, than those of more sudden and numerous bends. At the junction of two principal walks, each should diverge gradually in an opposite direction from the other (*a*), which would be more in character than if both inclined one way (*b*). In many cases, a branch or subordinate walk should set off at right angles with the direct or general walk; of course



rounding the sharp points off. Steep rugged ground, or ground of abrupt folds, naturally demands that the bends of the walks should be shorter and more numerous, for the purpose of obtaining the easiest ascents and descents. In woods or thickets, a short bend in a walk would be proper and quite in character, especially if there should be a fine tree, bush, seat, precipice, or any other object requiring a deviation. In all cases, the bends of walks must be sufficiently deep or bold (c), to afford room for shrubs to be planted, so as to prevent the eye from looking over more than one bend at once. A walk, taking as it were one direct line, with numerous zigzag or serpentine bends (d), is objectionable in the extreme.

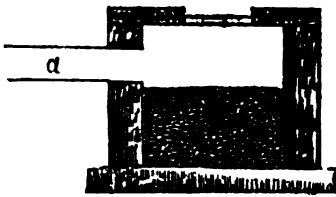
"In the formation of a walk, the earth should be thrown out to allow a depth of stone or gravel, of eight or nine inches; but, of course, if the soil be valuable, materials for forming the walk are plentiful, and expense is no consideration, there can be no objection to the soil being taken out to twice that depth. What I have named is sufficient to make a walk firm and dry, except in clayey and very retentive soil, in which case a drain should be made, six inches square, down the middle of the walk, and covered with a flag—or draining tiles may be placed there instead, as in the figure annexed. Then the whole breadth of the walk



should be filled up with rough stones, broken bricks, dross, or other rough materials, to the depth of four or five inches, or to such a depth as to allow of three or four inches of small broken stones, averaging an inch or an inch and a half in diameter, being laid on the top of them; or gravel of a similar size would do, leaving room for about an inch only of fine gravel to be laid on the top. Care must be taken, in forming the level of the walk, to avoid the offensive barrel-like appearance which we commonly see; an inch and a half in the yard fall, from the middle

to the side, will be quite sufficient. Previous to laying on the fine gravel (if it is not of itself of a cementing nature), this foundation must be well rolled, and then have spread on it as much of the scrapings from limestone roads as will just fill up the crevices; or, if this cannot be procured, very small dirty limestone or chalk scrapplings, or equal parts of lime, sand, and road-scrapings of any kind, may be substituted with pretty good effect. In all cases, rolling is essential to keep the whole firm and smooth; and this, if done in summer, will be best effected a few hours after rain. In most cases, rolling in dry weather loosens the gravel, rather than otherwise; therefore, at times, it will be necessary to have recourse to watering. I consider it a very important feature in pleasure-grounds to have the walks firm and smooth, and quite free from loose gravel—an evil much too prevalent. It is indeed too common a practice to hoe and rake the walks; whereas, if they be hand-weeded properly (the weeds being on no account allowed to seed), and kept firm by rolling, the labour soon becomes trifling, in comparison with the slovenly and expensive practice just named. Hoeing and raking, by the way, never leave an easy, smooth walking path. Deep edges to the walk sides must be carefully avoided. They should never at any time show a greater depth, from the top of the turf to the gravel, than one inch; neither should the edges ever wear the earthy appearance occasioned by cutting with the edging-iron or spade, except more than perhaps once a year, to keep the walks to their true form and width, as it is quite possible to have them kept very even, and with the greatest neatness, with proper grass-shears.

“Where walks are formed on the sides of hills they are liable to be damp; drains, therefore, should be formed on the upper side of the walks and parallel with them, as in the preceding figure. Grates should be placed at proper distances, close to the walks, with receptacles to catch the sand and refuse which are carried from the walk sides by the top-water caused by heavy rains. Each of these receptacles should be about fifteen or eighteen inches square, and about a foot deeper than



the drain which is to take off the water from it (a), in order that the sand may lodge below the mouth of the drain. They must also be frequently cleared out, so that the drain may not fill up. The drains which branch from the sump-hole or depôt may be taken to the drain in the middle of the walk, or to a principal drain elsewhere; or, in

the absence of such principal drains, a suitable cesspool may be formed at a little distance. Grates, five inches by seven, fixed loose into a small frame of iron, wood, or stone, would afford sufficient room for cleaning out the pit; and this size would not be so offensive to the eye as larger ones. To make them still less objectionable, it would be better to fix them entirely in the grass verge, or as close to it as possible, and only a very little lower than the level of the walk.

“In situations where it is necessary for the walks to be very abruptly

steep, small rises, like steps, should be formed, having the flats or treads three or four feet broad. This may be done by first placing a larch trunk across the whole width of the walk, to form the front of the rise, and then filling up the whole with fine gravel, or paving it with pebbles or very small paving-stones, in a gradual ascent, until it is necessary to place another trunk, and so on. If this is not attended to, such steep parts left in the usual way are liable to be disfigured and greatly injured by rapid runs of water; they are, moreover, actually unsafe.

"Grass walks are soft, cool, and inviting: a luxury in hot dry weather, but useless in wet weather. When room is plentiful, and the expense of keeping them in order no object, such walks may be formed through wooded scenery. In doing this, formality must be avoided; the walks should be of various or irregular widths—sometimes three or four yards, and others ten or fifteen—fringed naturally with bushes or shrubs and trees. In order to make a grass walk of this kind more generally useful, it must be kept closely mown and well drained."

We shall recur to this work in our next.

The Dahlia: its History and Cultivation, with Descriptions of all the best Show Flowers. By Robert Hogg. Groombridge and Sons, London.

Its practical details will be found useful to those who want to know how to manage Dahlias successfully. There are coloured figures of eight fine varieties of this flower. They are executed in a most superior manner by the very celebrated artist, Mr. James Andrews.

The Cyclopædia of Botany and Complete Book of Herbs. By Richard Brook. Huddersfield. 2 Vols. 12mo., pp. 734.

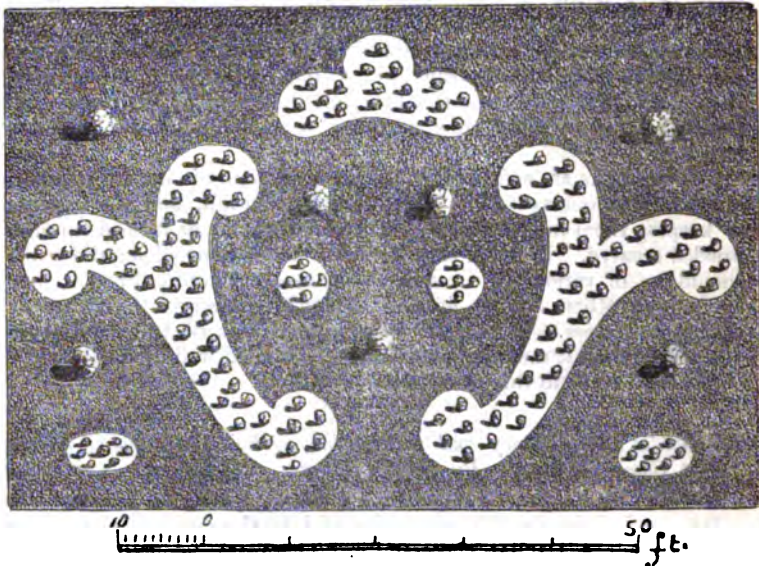
The object of the author appears to be to furnish the public with a useful and interesting Herbal at a very low price. He has accomplished this most satisfactorily. In addition to the 734 pages of entertaining letter-press, there are coloured figures of several hundred plants. It is worth a place in every family household.

DESIGN FOR A FOUNTAIN.—No. 1.



PLANS OF FLOWER-GARDENS.—By T. RUTGER, Esq.

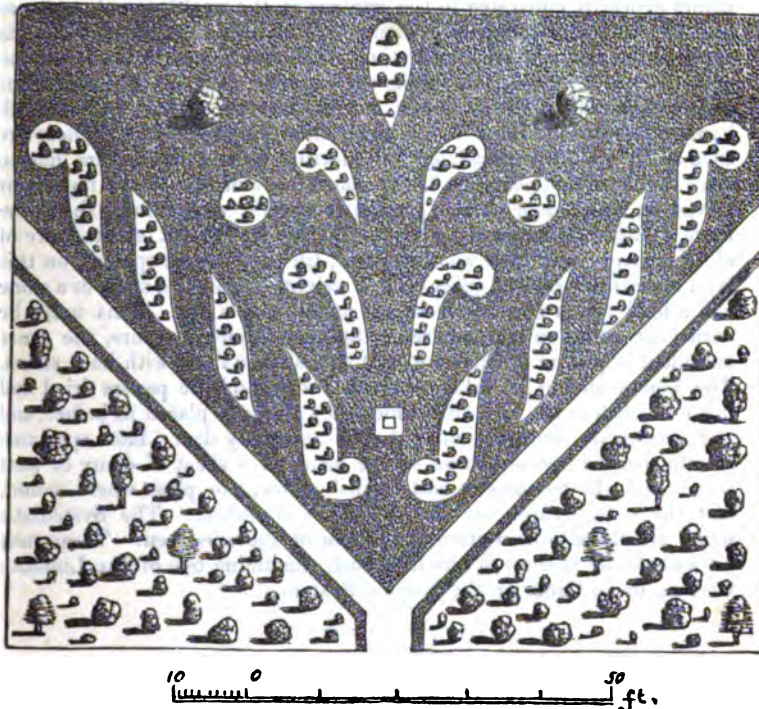
Nos. 7 and 8.



THE above group of beds, well filled with flowers on a lawn, opposite a drawing-room window, might prove an attractive object, particularly supposing the drawing-room to be upstairs, so as to look down upon the beds. The above sketch, however, being only simple in its outlines, may draw the attention of others to give more elaborate designs for the same purpose, according to the variety of taste which they may possess.

I have given this principally with the design to draw attention to groups in general, in opposition to the random way in which flower-beds may often be seen placed on a lawn. Frequently you may see the forms of stars, Maltese crosses, or diamonds, with other fanciful devices, placed here and there, without any order, or definite reason why they should be placed in the situations they are to be seen. However agreeable to the eye the outline of such designs as above alluded to may prove, yet to see them scattered over a surface without any kind of order, displays a deficiency of taste at once discovered by persons who have anything like correct ideas on the subject. With regard to groups in general, I think it will be agreed that to form them with their outline in scrolls, ovals, circles, &c., will be more pleasing to the eye than can be produced with figures in straight lines, such as crosses, &c., and which, by-the-by, are not so well calculated to throw into groups; they may pass off tolerably well in small places, where there is only room for a single clump; still, I think it will be conceded by persons of good taste, that forms varying from those made by straight lines are to be

preferred. I would except small squares and parallelograms where they may be appropriated in connection with fixed straight lines on the ground given for laying out, but these are exceptions to the general rule I should pursue. I should like to see the subject taken up by others of superior judgment and taste, by which I might stand corrected in the views I have given of it.



The second design here given is intended for a corner group, where you are supposed to enter through a shrubbery to a lawn where the walks branch off at right angles from each other. A great variety of sketches may be given for the same purpose, and therefore those now given are only by way of specimens, to draw others to show their skill in giving designs.

MISCELLANEOUS SECTION.

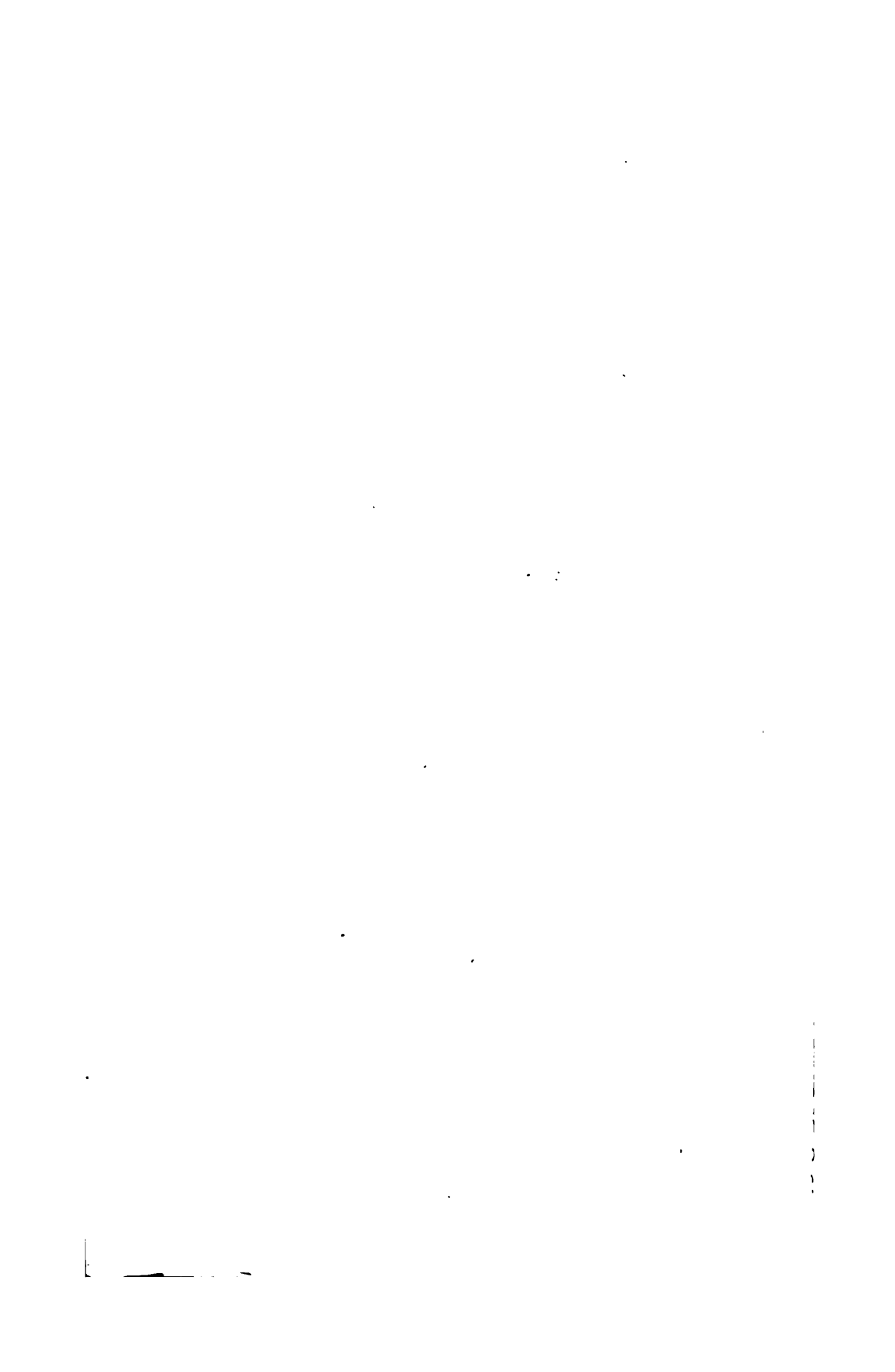
BOTANY, to adopt the words of Professor Lindley, in his preface to the "*Introduction to the Natural System*," "is a most extensive science, involving one hundred thousand gradations of structure, with myriads of minor modifications, and extending over half the organic world." In a science of such vast extent, it is not expected that the

young gardener should be able to make great proficiency ; but utter ignorance on the subject, which is but too common even amongst gardeners, who, in other respects, possess a perfect knowledge of their business, is quite inexcusable. He should, at least, obtain an intimate acquaintance with the principles of the Linnæan Classification, and should endeavour to entertain accurate notions of the Natural System also. Above all things, he should make himself familiar with the plants generally cultivated in the gardens of the wealthy, and, as far as possible, with the indigenous plants. With this view, he should seize every leisure moment for augmenting his *Hortus Siccus*, in the formation of which the following few simple rules may be useful. The specimens collected should be in full flower, and, if possible, should include both buds and seeds, the roots also in some cases are necessary. These are then to be carefully spread out on blotting paper, taking care not to alter the natural appearance of the plants ; one or two of the flowers or leaves, on which depend the generic or specific distinctions, should be more particularly expanded. Over this lay five or six sheets more of blotting paper, and then another plant, till they are all spread ; on this lay a smooth board, and place on it a weight—perhaps a stone or a stone and a half, which may be increased as the plants dry. This must be varied according to the nature of the plant under pressure, the more succulent requiring much less weight at first than those with hard stems. The plants should be taken out once a day, and the papers dried and made hot before the fire, after which they are to be placed as before, and this treatment continued until they are perfectly dry. Each specimen should then be fastened down on the inside of a sheet of demy or post paper, and the Systematic and English name, the place where found, and the date, written on the outside of the sheet. The Systematic name should also be written at the foot of the specimen. These may afterwards be tied up in bundles, each containing one of the Linnæan Classes, or an Order of the Natural System.

BRIEF REMARKS.

IXORAS.—These plants are very liable to be attacked by the mealy bug during winter ; when the wood is ripe and leaves firm, syringe them once a fortnight in every part with water at 140 degrees of heat. This will destroy the insects, and not injure the plant, nor will it be infested the following summer. The *Ixora* should have shortish but well-ripened wood of the previous year, to supply you with a profusion of fine heads of bloom. A winter's rest is also essential to succeed satisfactorily. To which have a compost of equal parts of turfy peat, only broken into pieces, with a liberal sprinkling of sand, and pieces of charcoal.—*W. Barnes.*—*The Florist.*

COTONEASTERS AS STANDARDS.—A Correspondent, recently asking information in this Magazine relative to the *Evergreen Cotoneasters*, induces me to answer him by stating, I have four kinds of them, each of which now have heads three feet across, and the stems on which they were worked are four feet high. The stocks are *Cotoneaster Acuminata*, which is a *deciduous* plant. My evergreen tree-like ones are exceedingly ornamental when in full ripe berry. Their rich scarlet-red or purple crimson coloured fruit, produced in vast profusion, have a cheerful gay appearance from October to May. I procured two plants of each at first ; one of each has a globular-shaped head, and the others have been allowed to extend their shoots downwards, and now form what may be termed "Weeping *Cotoneasters* ;" the ends of the branches are nearly at the ground. Each form of plants are very pretty and ornamental.





Medaille Dor.



PELARGONIUM MEDAILLE D'OR.

"Let you admir'd CARNATION own
 Not all was meant for raiment or for food,
 Not all for needful use alone;
 There while the seeds of future blossoms dwell,
 'Tis colour'd for the sight, perfum'd to please the smell."

Numerous have been the attempts to grow and bloom satisfactorily, in the beds of the flower-garden, what is usually called "the section of Show Pelargoniums," viz., such as the magnificent *large-flowered* varieties seen at the general exhibitions; but almost universal disappointment has resulted. For in a rich soil the plants produce a vast excess of foliage and but few flowers. In a poorer soil the plants become sickly, produce weakly shoots, and but a few small blossoms.

The following particulars of success, however, have recently appeared in the *Gardeners' Chronicle*:

BEDDING OUT PELARGONIUMS.—It has been a source of regret that the finest varieties of show Pelargoniums have not been found suitable for the decoration of our flower-gardens. Who can contemplate the splendid display of this beautiful tribe of plants at our metropolitan exhibitions, and not feel desirous that the same masterpieces of floral beauty could be made to assimilate with the Verbena, the Petunia, and other half-hardy plants, which throw so great a share of gaiety into our parterres during the summer months? But no; plant them out, and they literally run wild. Well, what must be done? are we to despair of ever possessing those gems of the greenhouse in our gardens? No; try again. Bring all your energies to bear upon an object and you must succeed. Well, I have tried and tried again, and have at last been successful, and I will give your readers the benefit of my experience. About this time a year or two ago, I took about 100 plants of the best varieties, such as Aurora, Mustee, Hebe's Lip, Mount Etna, Orion, Duke of Cornwall, Duchess of Leinster, Fire King, &c., all nicely coming into bloom, and planted them in three beds in the following manner:—Having got my plants well hardened off, that is to say, having fully exposed them to the influence of the sun and wind for a few days, I took a garden trowel, and dug a hole in the bed where I wished them to be placed of exactly the size of the pot, but nearly double the depth of it; the plant, pot and all, was then inserted in the hole in such a manner, that the rim of the pot was

level with the surface of the bed, thus leaving a vacuity of several inches in depth at the bottom of the pot. In this way I proceeded with the whole of my plants, and no Pelargoniums could possibly produce a better display of flowers than they did throughout the whole of the season. The roots being confined within the pot, are as much under command as though the plants were in a greenhouse; and if any of them should show the least disposition to ramble, they can be taken up and examined at any time; besides, under the conditions I have just mentioned, a fresh arrangement of the plants might be made with nearly as much ease as if they were on a stage in the greenhouse, and without the least injury to them. It is true, Pelargoniums planted in this way require a little more attention as regards watering than plants do turned out of pots; but then the cultivator is amply repaid for all extra trouble by abundance of blossom. Hoping that others may be as successful as I have been with the above method, my recommendation to all is to try my plan.—*A. K., Stoke Newington.*

Subsequently other communications have been sent, the writers stating "they have practised the same mode of treatment, and the plants bloomed abundantly." And plants that *have bloomed* in the greenhouse in the spring, being put into the beds soon after the blooming is over, push afresh and flower freely during the latter part of summer, and autumn too.

Nearly all the class of Pelargoniums called "Fancies" succeed admirably turned out of pots and grown on the open ground, but they are not suitable for all circumstances, not being tall enough, or have blossoms as large as may be desired. Recently, however, a new section, of medium habit in growth, with large flowers, and free bloomers, has been raised; the flowers, too, are of fine form, both rich and beautiful in colours; they are termed the "Diadematum section."

Many of our readers know how beautiful a *well-filled* bed of the "Diadematum Rubescens" is, with its profusion of bright rosy-red large flowers; a charming improvement, however, has been effected in obtaining a number of seedlings of similar habits, with flowers of much more brilliant colours, and strikingly handsome in *every petal*, having a spot or blotch of crimson-velvet, or other very distinct colour, in the centre. Thus each blossom, having five such distinct spots (similar to Hoyle's Nonsuch), renders a bed of them one of the loveliest the flower-garden can contain.

The florists of France and Belgium have been endeavouring for several years to improve the "Diadematum" by hybridizing; and the beautiful varieties above referred to have been selected from a great number raised by the gardener of Mr. James Odier, in France, who sent them to the National Society's Floral Exhibition, held in Paris last November, and they were then purchased by Mr. A. Meille, nurseryman, of Esquermes, near Lille, in France, who has propagated them, and is now sending out ten very superb varieties. (We gave particulars of colours, &c., in our April and May Numbers.

The variety we now figure is one of the seedlings, which, for its brilliant and rich colours, borne in profusion, was the admiration of all who saw it at the exhibition; and is one of the finest bedding varieties existing. It is well entitled to the name given, "Medal of Gold." Its medium habit of growth, free blooming properties, as well as the size of its brilliant flowers, alike contribute to recommend it, as well as the other varieties offered, to all who desire to beautify and ornament a greenhouse or flower-garden.

NOTES ON NEW OR RARE PLANTS.

AZALEA CRISPIFLORA.—Mr. Fortune introduced this pretty blooming plant from China, and it has bloomed in the greenhouse of Messrs. Standish and Noble's nursery at Bagshot. It is a medium-sized, numerous-branched shrub, which blooms very copiously. Each blossom is about three inches across, of a deep rose colour, and the margin of the blossom is remarkably waved and crisped, having the appearance of a frill. Figured in *Botanical Magazine*, 4726.

LILIUM ROSEUM (Synonyme, *Fritillaria Thomsoniana*. *Lilium Thomsonianum*).—It is a native of South America, discovered by Messrs. Thomson and Strachey. Seeds were sent to the Kew Gardens, and the plants bloomed, last April, in a cool frame. The leaves, in form, rather resemble those of a narrow-leaved *Hemerocallis*, than a Lily or Fritillary. The stem, including the flowers, rises about half a yard high, terminating in a raceme of about ten handsome drooping flowers of a pretty lilac colour. They are, in form, between a funnel and bell shape, each blossom being nearly two inches long. Very neat and pretty. Figured in *Botanical Magazine*, 4725.

LITTONIA MODESTA.—A climbing plant of similar habit to the *Gloriosa superba*; but the flowers are very different. The flowers are drooping, and each blossom is somewhat bell-shaped, having six rich orange coloured sepals, an inch and a half across. It is a native of Natal, and has recently bloomed in the stove in the Royal Gardens of Kew. Figured in the *Botanical Magazine*, 4723.

LOPEZIA MACROPHYLLA (Synonyme, *L. grandiflora*).—Sir W. J. Hooker states, "Received from Mr. Van Houtte, under the name of *Jeklia fuchsoides*." It is a small *half-shrubby* plant, having fleshy tuberous roots like the *Fuchsia fulgens*. The leaves, too, are like those of some of the common *Fuchsias*. The flowers are produced at the ends of the shoots, each having ten or more; and the long segments of the *calyx*, as well as petals, of a bright red colour. The form of each blossom, when fully expanded, is bell shaped. The plant is a native of Mexico and Guatemala, and blooms freely in the greenhouse at the Royal Gardens of Kew. Interesting and pretty. Figured in the *Botanical Magazine*, 4724.

SEMIANDRA GRANDIFLORA.—This is a remarkable genus, allied to *Fuchsia*, with singularly-formed (father long-legs like) flowers, of a bright scarlet colour; the coloured calyx constitutes nearly the entire flower. It was discovered by Mr. Seeman, in the temperate regions of North-western Mexico, growing among *Galphimias*, *Tupas*, *Cupheas*, and *Lobelias*. It is a half-shrubby, erect, branching plant, growing about six feet high, and blooms very freely; each blossom is two inches across. It is in the Royal Gardens of Kew, and it began to show its blossoms in March, 1853. It bears, too, a profusion of fruit, which adds to its interest and beauty. It merits a place in every garden. Figured in the *Botanical Magazine*, 4727.

XANTHORRHOEA HASTILE. SPEAR YELLOW-GUM.—A native of Australia, known as the Gum-tree, or Grass Gum-tree. *Yellow Resin*

is the product of this plant. The caudex (trunk) is short and thick, and the central scape (bearing a terminal brown spike, like a Reed mace) rises to about twenty feet high. Its long grassy-like leaves and tall scape render it an interesting object. There is a plant in the Royal Gardens of Kew. Figured in the *Botanical Magazine*, 4722.

HOYA FRATERNA.—Its specific name, *fraterna*, is given in allusion to the close resemblance the plant has to *Hoya coriacea*. The blossoms of *H. fraterna* are pale pink, with a lighter narrow margin, and the centre crown is yellow. It is an interesting and pretty flowering plant, and, like all the genus, deserves a place in every stove or warm greenhouse.

LAPAGERIA ROSEA.—Messrs. Veitch have a plant of this most beautiful flowering climber trained to a trellis, so as to form a bush four feet high, with fifteen of its handsome blossoms expanded. It was shown at the Horticultural Society's Exhibition, at Chiswick, on July 9th. It was admired by every person who saw it. It is now supposed to be hardy, if planted in a soil and situation having the roots protected during winter. It will prove to be one of the finest plants for training against a wall or trellis, shaded from midday sun; or in the greenhouse, in a shady part. It ought to be in every garden where it can be properly accommodated.

VERONICA VARIEGATA.—An hybrid, between *V. salicifolia* and *V. speciosa*. It is as hardy as the parents, and will be a charming ornament for either the greenhouse or open air, in dry soil and situation. The flowers are in long spikes, and the variegation is displayed by them. The flowers at the lower part of the spike are white, the centre portion of a French lilac, and the upper part of a pretty pink. Messrs. Veitch possess the plant.

CERATOSTEMA LONGIFLORUM.—The plant has much the appearance of a *Vaccinium* of medium size, and evergreen bushy shrub. The flowers are produced in loose terminal clusters; each blossom, somewhat trumpet shaped, about two inches long—the lower portion of a bright orange, and crimson-purple above. It has been considered a stove-plant; but will succeed well in a greenhouse.

DELPHINIUM BEAUQUARTO.—The flowers are produced in long spikes, of a light blue, each blossom having a white stripe and white tip at the end of each segment. It is exceedingly neat and handsome.

D. PICTUM.—The spikes are about three feet high. Flowers, sky-blue, striped with white. The outside of the blossom is almost white. Very beautiful.

D. AZUREUM PLENO.—A rich sky-blue, with a rose stripe up the middle of each segment. The spikes of blossoms about three feet high. Very pretty.

D. BENUTE DE CHARROND.—The flowers are of a brilliant sky-blue, each blossom nearly two inches across. The centre (Bee) is purple, with a yellow spot. The spikes are about three feet high. Very beautiful.

D. SPECTABILE.—The flower-spikes three feet high. Each blossom is of a light blue, with a stripe of purple up each segment, and the outside of the blossom nearly white. Very pretty.

D. SPLENDIDUM.—The spikes are from three to four feet high. Each blossom nearly two inches across, a light blue, with a rosy-purple stripe up each segment, and a tip of the same colour.

D. VERSICOLOR.—Grows two and a half feet high. Each blossom is on the outside blue, with a green tip to each segment. The inside a rosy-purple, with blue streak up each segment. The flowers are very compact, and close at the face. Singular and pretty.

D. MOOREII.—It grows about two and a half feet high. The flowers are of a brilliant blue inside, and the spur is purple. The centre (Bee portion) is yellowish. Very handsome.

D. MESOLEUCUM SUPERBUM.—Grows about two and a half feet high. Each blossom is of a brilliant rich blue, with the centre (Bee) sulphur and white. Very handsome.

LINUM GRANDIFLORUM.—An annual, with brilliant crimson flowers; is in bloom in the garden of the Horticultural Society. It is very handsome; but appears of delicate growth.

GERANIUM PRATENSE FLORA-PLENO.—This very handsome, hardy, herbaceous plant grows about eighteen inches high, bushy, and blooms profusely. The flowers are produced in terminal branching panicles, each blossom being a full double, one inch and a half across, blue, with a rosy-red centre. It merits a place in every flower-garden, blooming during the summer season.

CAMPANULA TRACHELIUM BICOLOR-PLENO.—This charming, bushy, hardy, herbaceous plant grows about two feet high, of neat habit, and blooms in profusion. The flowers are bell-shaped, large, full, double. The outer row of petals are lilac, the second white, with a lilac stripe up the middle, and the rest of the petals a pure white. Each blossom is about two inches long, and one and a half broad, very double, and very handsome.

LYTHRUM SALICARIUM ROSEUM SUPERBUM.—This, too, is a hardy, herbaceous plant, producing numerous long spikes of bright rosy-crimson flowers, which rise to about three feet high. It is handsome and very showy.

DRACOCEPHALUM CANESCENS.—A hardy, herbaceous plant, producing numerous long spikes of bright blue and purple flowers. It is of compact growth, eighteen inches high. Very handsome.

NEW OR SHOWY PLANTS IN BLOOM IN THE ROYAL GARDENS OF KEW.

CAMPANULA VIDALLII.—This fine Campanula we figured in our last years' Volume. It is of shrubby habit. The flowers are *large*, long, bell-shaped, and of a "waxy-white." A plant of it, in a cool greenhouse, has fourteen long spikes of flowers, now about to bloom; and when in full bloom, will have a very charming appearance. The plant merits a place in every greenhouse or flower-garden.

DRACOCEPHALUM PEREGRINUM.—Hardy, herbaceous, spreading, grows nine inches high. Flowers borne in long spikes, in profusion, a bright blue. Very pretty.

VITTADENIA TRILOBA.—Hardy, herbaceous, spreading. One has

spread two feet across, and it rises from the outside to the centre, where it is about nine inches high. The entire surface is closely covered with true Daisy-like flowers, white, pink, or rose-coloured; and each blossom is about three-parts of an inch across. It is very pretty, and exceedingly interesting. A charming plant for an edging to a flower-bed, or grown in patches. It blooms for a long period, too.

ONOSMA TAURICA.—Hardy, herbaceous, one foot high. Flowers yellow, tube-formed, two inches long, similar to the *Cerinthe major*. Very pretty.

AQUILEGIA SIBERICA.—A charming Columbine, growing two and a half feet high, bearing a profusion of large, deep-lilac coloured flowers. Very showy.

AQUILEGIA FRAGRANS.—Two and a half feet high, having very large flowers, the outside blue, and the interior white. Very showy.

PAPAVER PYRENAICUM.—This charming, hardy, herbaceous species grows a foot high, forms a neat bushy plant, having pretty foliage, much like that of the *Escholtzia*. The flowers are of a very bright yellow, three to four inches across. It is very neat and pretty, and in profusion is very showy.

SYMPHYTUM BOHEMIUM.—A neat Comfrey, one and a half feet high, blooming in profusion, having very pretty rosy-crimson flowers.

IN THE GREENHOUSE, &c.

GLOXINIA FIMBRIATA.—A fine pot of this very handsome plant (the *Achimenes fimbriata* of some) is in fine bloom, the large blossoms white and yellow, beautifully spotted with dark, render it strikingly handsome. We gave a figure of it two years ago, as *Achimenes fimbriata*.

G. MADAME CHARTY.—White, and a sulphur-coloured throat, edged with lilac and crimson. Very pretty.

G. Dr. GARDNER.—Pink, with a broad white throat edged with carmine. Very pretty.

ACHIMENES MARGUERETTE.—The blossoms are pure white, each a little larger than a shilling, and makes a pretty contrast with the coloured flowers of others.

PELARGONIUM BOULE DE NEIGE.—This is one of the Horse-shoe Geraniums (so called). The flowers are of excellent form, good substance of petal, white, with a slight tinge of flesh, *occasionally* on the two upper petals. It was sent out by Messrs. Henderson, of Wellington Nursery, and well merits a place in every collection.

HYDROLEA CHITTRYA.—An erect-growing plant, about two and a half feet high, the shoots terminating in a head of rich blue flowers, each blossom being about three-parts of an inch across. It is very pretty, and worth a place in every greenhouse.

GOMPHOLOBIUM SPLENDENS.—By stopping the leads, it forms a very neat bushy plant. The flowers (pea-blossom like) are of a bright yellow, each one inch across. Very neat and handsome.

PELARGONIUM BICOLOR ROSEUM.—A neat, low, bushy plant, with foliage like the Otto of Rose (*Geranium*). The flowers are produced in

heads of several in each, white, and each blossom has five dark spots. It blooms freely, and is very neat and pretty, either in the greenhouse or flower-beds.

DATURA CORNIGERA (*Brugmansia* of some).—A very branching, shrubby plant. Those of two feet high and upwards bloom freely. The flowers are white, each about eight inches long, similar in form to the *B. suaveolens*. It is very pretty. The *B. KNIGHTII*, also a branching-shrub, blooms freely, and its large, double, pure white, fragrant blossoms are very handsome, and small plants blooming freely render them charming ornaments for the greenhouse, &c.

ROELLIA CILIATA.—A low, neat, bushy plant, blooming very freely. Each blossom, bell-shaped, with the mouth upwards, of a light blue, with a velvet girdle inside, is very pretty. It merits a place in every greenhouse.

ERICAS, THEIR TREATMENT IN ALL SEASONS, AND THE NAMES OF A FEW OF THE BEST VARIETIES FOR GENERAL CULTIVATION.

BY MR. JOHN BURLEY, OF WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON.

IN the last number of the *Cabinet* I gave the article on *Epacris*. Now, as *Ericas* and *Epacris* are closely connected, I am induced this month to offer for the perusal of your readers an article on the favourite family of *Ericas*; little doubting but it will assist many of the readers of the *Cabinet* to grow the plants to that state of perfection to which such charming plants are entitled.

Ericas, in general, are not grown as they should be; in fact, there seems to be a kind of dislike to them by persons unacquainted with their proper treatment. The excuse with them generally is, "I take the greatest of care of them, but still they soon get yellow and die." But to do away with that disaster, pursue the following method of treatment, and you will certainly grow them successfully, and have plants that are healthy, and bloom vigorously in their due season. My remarks on their management will commence from March, it being the principal season for potting.

POTTING is the first and principal feature in their culture; there are heath growers that adopt what is termed the "one shift system," that is, to take a strong young plant and shift it at once into a very large-sized pot; but I beg to protest against such usage. A far better plan to adopt is the system of shifting a plant when its advancing growth requires it. For instance, supposing a plant in March is in a four-inch pot, the size required for the shift would be not more than five inches, as it is far better to give a heath two shifts in one season than over-pot it. The space between the ball of the plants and the pot it is to be shifted in should be from half an inch to an inch, according to the size and natural vigour of the plant. The plant, if it is doing well, may have the second shift in the same season if the pot be tolerably filled with roots.

THE SOIL best suitable for heaths is good peat from the moors, taking the top about three inches thick. It should be broken in tolerably fine pieces for the first stages of potting, increasing its roughness as the plant increases in growth. All that requires to be removed from the peat when broken is the largest of the *fern roots*; such are generally found in good peat, but all the fine fibrous masses should remain, as that constitutes the best for the purpose. When the peat is so prepared, add about *one fourth* of silver sand; but the sand before it is mixed with the soil should be well washed in fresh water to remove all impurities. It matters but little as to its colour if it is but sharp and clean. The pots used should be thoroughly cleaned; the crocks for draining be well washed before using, to remove all dirt that may be on them; then place a large crock over the hole in the bottom of the pot, placing a few large ones around it, and finally finishing with smaller ones, and place over the whole some of the roughest fibre from the peat to keep the drainage free; then turn the plant carefully out of the pot, remove the old crocks from around the roots, and a slight portion of the surface soil that may be loose, without disturbing the young roots. In placing the plant in the fresh pot, the centre should be slightly elevated, say level with the rim, but not by any means higher, and gradually slope away to the side of the pot which should have left for sufficient watering a depth of half an inch or more, according to the size of the plant and pot. The soil should be well pressed down around the ball, with a small piece of wood, to fill it up regularly around. I must also observe that the ball of roots should be well watered, *if dry*, before potting, so that it may be wet throughout, as it will be very difficult to do so after potting, as the water would pass away rapidly through the new soil, and the consequence would be a loss of foliage, and the plant be disfigured. After potting, little else is required until the season arrives for their removal out of doors, but attention in watering and arranging the shoots. In summer they should be removed out of doors; the situation best adapted for them would be the shady side of an evergreen hedge, where they would have as much air as necessary, and at the same time be protected from the scorching rays of the mid-day sun. A situation where they would have the sun for a short time in the morning, and again in the evening, would be of service to them; this might be accomplished by means of a canvass, or other screen, if there was no other. The pots may stand on a bed of coal ashes made solid to prevent worms, &c., rising through.

Great care is required in watering Ericas, even in *summer*; all they require is the soil *just kept moist*, "*not wet*," for, above all other plants, they do not like to be treated as *aquatics*. As a superabundance of water will sodden and turn the soil sour, also exclude air from the roots,—the result is the loss of foliage, and finally the loss of plant. During the season out of doors, the plants must be kept clean, and the bed of coal-ashes at times stirred up afresh, with a slight sprinkling of fresh ashes added. The latter end of September or beginning of October the plants must be removed to their habitation, when the plants must be thoroughly cleaned, the pots washed, and the surface of the soil made clean. If mildew make its appearance at this or any other

season, dust the parts affected with sulphur of vivum ; it may remain on the plant for a few days, and then be syringed off. Ericas may be wintered in a greenhouse with other plants, such as Epacris, Camellias, &c., and they may be arranged at the coolest end of the house. Those persons who wish to grow a small collection, who have not the convenience of a greenhouse, may do so quite successfully if there be the advantage of a plant pit, or frames. The treatment they will require in such a situation is to give them as much air as possible, and at all times, when the temperature is not under forty degrees, just to protect them from frost. Mats should be laid over the lights, and a thick layer of straw to keep out all frost from the plants, and when the days are fine take advantage of the same, and remove the lights off, if only for an hour ; but if too severe by day even to remove the lights and give air, the straw and mats may be removed to give them all the light possible. Very little water is required while the plants are in the greenhouse or pits ; in fact, the humidity of a close house or pit at this season is nearly sufficient to keep the plants in as moist a state as is required. By keeping the plants clean during winter, and pursuing the above directions, that is all they will require until the potting time in March arrives, when do as before recommended. Before closing my remarks, I may as well add that Ericas require a *dry atmosphere, plenty of air, and little sun*, and if the above direction on their treatment be duly attended to, I am certain that we shall see healthier and far better plants grown in private collections than is at present seen to be. I shall close my article on this charming family of plants with the names of a few good Ericas sufficient to form a small collection :

<i>Aitonina.</i>	<i>M'Nabbiana.</i>
<i>ampullacea Major.</i>	<i>mutabilis.</i>
<i>aristata Major.</i>	<i>obbata.</i>
<i>Beaumontia.</i>	<i>odorata.</i>
<i>cerinthoides Coranta, S.</i>	<i>perspicua nana.</i>
<i>Cavendishii, Y.</i>	<i>Princeps carnea.</i>
<i>depressa major.</i>	„ <i>templea.</i>
<i>Devoniana.</i>	<i>Jacksonii.</i>
<i>dilecta.</i>	<i>tricolor Dunbarri.</i>
<i>elegans.</i>	„ <i>elegans.</i>
<i>favoides elegans.</i>	„ <i>speciosa.</i>
<i>Hartnellii nana.</i>	<i>ventricosa coccinea minor.</i>
<i>inflata rubra.</i>	„ <i>globosa.</i>
<i>Irbyana.</i>	<i>Vernonii superba.</i>
<i>Jasminiflora.</i>	<i>Webbiana.</i>

The above varieties are not at all difficult to cultivate ; they may be grown in either greenhouse, pit, or frames, in winter, are free flowering, and of close ornamental growth.

Some of the heaths have a natural tendency to grow erect, and become naked below ; but any such can be made compact bushes by stopping the shoots once, or in some cases twice, during the season of growth.

HYACINTHS GROWN IN THE OPEN BED.

BY SHARON JOHNSTONE, AN AMATEUR FLORIST.

I HASTEN to fulfil my promise by rendering an account of the method observed by many amateurs and florists in cultivating Hyacinths in beds and pots, and which is adopted by me as being the most preferable. The observations I am about to offer thereon should be as succinct as the subject admits, and be strictly confined to practical results, for mere theoretical statements in this, as in nearly all other matters, bewilder rather than instruct. Being an enthusiastic admirer of the flowers, I have taken no ordinary pains to produce a good bloom, and can, therefore, the more confidently suggest a few hints respecting the culture of it. It has always appeared to me, as well as to many with whom I have conversed upon the subject, to be a matter of regret that comparatively so little attention should be bestowed on this flower: the Tulip has numerous fanciers, and so have Carnations and Auriculas, whilst the Hyacinth, though not inferior in beauty, seems, as to blooming it in beds, to be too generally neglected; and yet a more beautiful object amongst all those which attract the eye in a flower garden is rarely seen. The effect produced by a glance at an assemblage of so beautiful a flower, especially when well arranged, is dazzling, and a close inspection will be found to increase the gratification derived therefrom, added to which the fragrance emitted by them is peculiarly sweet, and is not surpassed by the Mignonette or the Tuberose.

The most eligible part of a garden for a bed is that with a southern aspect, and considerably distant from trees and large shrubs, as the droppings to which plants beneath are subjected, prove extremely prejudicial; the season for planting is during this and the following month, the precise time being indicated by the appearance of the root itself, which I noticed in my remarks that were inserted in a late Number; a repetition of it therefore is unnecessary. The portion appropriated should be excavated to the depth of about two feet, the earth at the bottom loosened and rendered fine to about six inches deeper, and then raked smooth. This process will take but little time, and may be attended with advantage; the hollow should then be filled with the following compost: one-third of good garden earth; one-third of sea or river sand, as coarse as can be obtained; one-fourth rotten dung, about three years old; and the remainder vegetable mould.

The earth used in the compost will require minute examination, in order that vermin may be exterminated, of which the most destructive, and the most likely to elude detection, is the yellow wire-worm.

When preparing the compost, let its several parts be well mixed; this should be performed a few weeks before it is needed, and will require turning over several times. After the bed is filled up add more compost till it is raised three or four inches above the walk in front, and let the height of the back part be an additional six inches, so as to form a slope to the south; a layer of sea or river sand, one inch thick, should be spread over the surface, and if a tasteful arrangement be desired,

the place for each bulb should be marked thereon. The following order appears the most natural, and has decidedly the best effect. Let the rows be six in number, and eight inches apart, and allow the distance between the bulbs, and four inches from the four outer rows to the limits of the bed. On the layer of sand in the places appropriated to them, let the bulbs stand in the following position throughout; red, blue, white, red, &c., commencing with a red in the first row, and in the second with a white, which place under a supposed point equi-distant from the red and blue above it; the next root will consequently be a red, and under the point between the blue and the white; in the third row begin with a red, as in the first, and let it be directly under the red, in that row, the blue following it, will be beneath the white and red of the second row; the fourth row will commence with white as the second, and be directly under it: the red in the next place will be under the blue and white of the third row, &c. This mode allows the greatest possible diversity, and each bulb, except the outer ones, will be in the centre of a hexagon. In this arrangement yellow Hyacinths may be considered as white. Then cover them with a mixture of fresh earth and sand, three or four inches deep; the latter depth is the proper one for the earlier roots, as it will retard their progress, so as to bloom with the later ones; an attention to this is requisite to ensure all blooming together. When covered the bed will be completed, and if bordered on the sides, will add much to the neatness of it, or if preferred, brickwork may be substituted, and hoops placed over the beds, will be useful, as mats can be thrown over the beds, during severe frosts or heavy rains; but for slight frosts, as the Hyacinth is hardy, no covering is necessary, and rain, when not violent, is beneficial; the autumnal rains are, except in very dry seasons, sufficiently copious to obviate the necessity of artificial watering.

A few bulbs or reserves should be planted in pots at the proper time, and plunged in order to supply deficiencies that may occur, for some bulbs whose appearance indicate no symptoms of decay, are rotten at heart.

It will be proper to plunge them, and this may be done in the ordinary way, by placing the roots three or four inches asunder, then filling up the interval between, and afterwards covering them from six inches to a foot until the return of spring; but the greatest care must be previously taken to examine the earth, otherwise though but a single wire worm, or other noxious vermin remains, the roots are in jeopardy. Or another and much safer method may be adopted; instead of earth, let cinder ashes be substituted in its stead, place the pots on layers of these, six inches thick, fill up the space between, and cover them as mentioned above. By this means no insect can approach the pot, so that if the compost in which the bulbs are planted to be free from them, no injury need be apprehended; they will now be safely lodged in their winter quarters, and by due attention will be a provision to supply deficiencies. They can be easily turned out of the pots into the bed.

REMARKS ON THE HONEY BEE AND THE GARDEN.

BY APIS.

THE poet invites the honey bee to fragrant tufts of the wild thyme, the head of the cowslip, the bell of the lily, and the bed of violets, and again he says :

“ Come, honey bee, to our woodlands come,
 There's a lesson for us in thy busy hum ;
 Thou hast a treasure in store in the hawthorn wreath,
 In the golden broom and the purple heath ;
 And flowers less fair,
 That scent the air,
 Like pleasant friends, drop bloom for thee ;
 And thou winnest spoil
 By thy daily toil,
 Thou patient, and thrifty, and diligent bee.”

In many of our gardens there may be grown a greater number of “flowers for the bee” than we commonly meet with in various parts of the country. In order that our supply of honey may be increased, the bee has often to wing its way far from home to obtain that sweet viscid substance which it elaborates from the juices of the nectaries of flowers, and deposit in the waxen cells of the honey-combs. By cultivating to a greater extent such plants as produce honey for the bee, we may look upon our gardens as a portion of our sugar plantations, for we are told that pure honey consists of a syrup, or uncrystallizable sugar, and of a solid or granulous sugar which resembles that obtained from the grape. Besides,

“ We may learn from the bee, the wise man's lore,
 ‘ The hand of the diligent gathereth store ;’
 He flies in his calling, from morn till night,
 Nor tires of his labours, nor flags in his flight ;
 From numberless blossoms of every hue,
 He gathers the nectar and sips the dew.

INCREASING THE SHOOTS FOR LAYERING, OR OTHERWISE PRESERVING, THE CARNATION, OR PICOTEE.

BY A COUNTRY CURATE.

As it is frequently the case that a *weakly* layer or piping of Carnation is lost in consequence of its only sending up a flower stem and no side shoots, and as the time is now approaching that every admirer of that beautiful flower will gratefully receive any intelligence respecting its cultivation, I beg (with deference) to communicate a plan that I have adopted with universal success. It may not be novel to some, although I have never heard of its being practised by any one, till from reasoning and observation as to the result, I made trial of it myself, and have this year two plants with four or five side shoots, besides having the pleasure of the blossom last year ; whereas if the flowering stem is cut down

early it sends up another and dies; if left till the bloom fades, your plant is almost sure to perish, notwithstanding the greatest care.

In the month of July an incision is to be made as for layering, except that it is to be commenced above one of the lower knots and carried downwards; the current of sap being thus divided, one half nourishes the flowering stem—the other, finding a check, sends forth a shoot or more, thus saving your plant.

RAISING TROPÆOLUM TRICOLORUM FROM SEED.

BY A PRACTITIONER.

MANY of our readers are aware of the great difficulty of getting seeds of this plant to vegetate. I have practised the following method for several years with constant success. Take the seeds and place them in the pans belonging to the pots commonly used in gardens, filled with water, and let them soak for two or three days, till the shell which surrounds the interior of the seed will come easily off. After removing the shell, which requires to be done with great nicety, or you will injure the principal point of the seed, prepare some pots, filled with some good rich compost, composed as follows: two parts good decayed leaf-mould, one part hazel loam, and the fourth part of equal portions of bog-earth and sand, which mix well together; fill the pots about three parts full, or rather more, of this mixture; then place the seeds on the top, (not too many, or you will not be able to remove the plant after it has formed a tuber,) and fill the remaining part with fine white sand, giving it a gentle pressing. Then remove the pots to the cool greenhouse, and place them in as shady a place as you possibly can, without anything being kept too close to them. Keep the pots always in a damp state; but mind when you sow the seed to place plenty of drainage at the bottom. As soon as some of the plants appear above the soil about one or two inches, take a small stick, and lift the seed from the soil, moving as little as possible the other soil, or you will injure the remaining seeds. Pot the young plants into the size pots called thumbs, which afterwards treat the same as for old plants in a growing state. The seedlings thus raised will flower the succeeding summer, and the year following make good established plants. Should any further remarks on them be required, I should be very glad to send them.

PROPAGATION OF PLANTS FROM BUDS.

BY AN AMATEUR PLANT GROWER.

In the month of March, 1852, I disbudded several plants of the "*Daphne Laureola*," and left the buds scattered on the ground beneath. A month or five weeks afterwards I was not a little surprised to find that they had almost all sent out roots. This hint

induced me to make experiments upon other plants ; and at the end of April I took several slips of the "*Lagerstræmia Indica*," a stove shrub, which had just burst forth, and had advanced to the length of from twelve to twenty lines, taking care to reserve with each a small portion of the parent bark. I then stripped them to the extent of seven or eight lines from the base upwards, and planted them in a pot filled to the depth of two inches with broken potsberds, and above with a compost, two years old, of willow mould, the refuse of the vintage, and pit-sand well washed. They were then well watered, and placed in a hotbed under a bell-glass, and care was taken to shade them and give them air when necessary. The first fortnight several damped off from the glass, not having been properly attended to ; but on the twenty-second day after they were planted, I found that the rest had passed from the herbaceous to the half-woody state, and the terminal bud seemed to announce that there would shortly be a rise of the sap. Six days after this I pricked them out into small separate pots, and discovered that each had made a thick tuft of roots, and twenty-seven out of thirty-eight succeeded completely. I tried the same plan, and with equal success, upon four varieties of the "*Metrosideros*," upon the "*Mela-leuca*," "*Clethra arborea*," and "*Magnolia grandiflora*," besides *Acacias*, *Roses*, and many other stove and greenhouse plants. By this means I have obtained a considerable number of plants fit for sale, if so inclined, in the course of twelve months, remarkable for their strength and beauty, and from eighteen to twenty-four inches in height.

This simple method, I think, may be applied to all kinds of plants ; and, as I have never seen it alluded to in any horticultural work, I venture to think that, if you consider it worth publication, it may be of some service to practical gardeners.

[We have seen this method practised with admirable success in a small nursery near London.]

THE ROSE-BUSH AND THE LEAF-EATER.

BY MR. PETER MACKENZIE, OF WEST PLEAN, NORTH BRITAIN.

A cottager's wife has a favourite Rose-bush, and she bestows much care upon it, that she may have plenty of roses for herself and her town relations ; but she was vexed lately to witness the leaves of her beloved plant cut up in a manner she had never seen before. She tried to find out who had done the mischief ; and as she watched from time to time, she discovered what she thought was her own bees busy at work cutting the leaves of the plant to fragments, and flying off with them. She told her husband what she had seen, and wanted to know what was the reason that their bees had left off working among the flowers and commenced clipping the leaves of her rose-bush to pieces. He went and saw them at work, but he soon saw that it was not their bees that were doing the injury, but a different kind of bee altogether. It was the "*Leaf-eaters*" that were at work among the rose-leaves,

viz., the *Apis centuncularis* of some naturalists. The following notice respecting their mode of cutting the leaves may be interesting to some of your readers :

Nothing can be more expeditious : they are not longer about it than we should be with scissors. When the insect has selected a bush furnishing the leaves required, she keeps hovering over and flying round it, until she has discovered the leaf best adapted for her purpose. When she has chosen the leaf she alights upon it, sometimes on the upper surface, sometimes underneath it, or at other times on the edge, so that the margin passes between her legs. As soon as she has made a beginning, which she usually does near the main nerve, she continues cutting with her mandibles until the work be completed, and as she proceeds she keeps the margin of the detached part between her legs, those on the one side being above and the other below, so that the section keeps yielding to her, and does not interrupt her progress. She makes her incision in a curved line, approaching the rachis at first; but when she has reached a certain point she keeps receding from it towards the margin, still cutting in a curve. When she has nearly detached the portion she has been employed upon from the leaf, she balances herself, lest its weight should carry her to the ground; and the moment of its parting from the parent stock she flies off, the detached portion remaining bent between her legs, and being perpendicular to her body. She pursues the same mode whatever the form or size of the piece necessary for her purpose. A careful observer may discover Rose-tree leaves cut with great exactness, and have the pleasure of seeing with what dexterity a bee, destitute of any mathematical instrument, cuts out a circular piece, fit to be either the bottom or the lid of one of their nests. Others it cuts out into ovals and semi-ovals, which form the sides of their nests.

PLANS OF FLOWER-GARDENS.—By T. RUTGER, Esq.

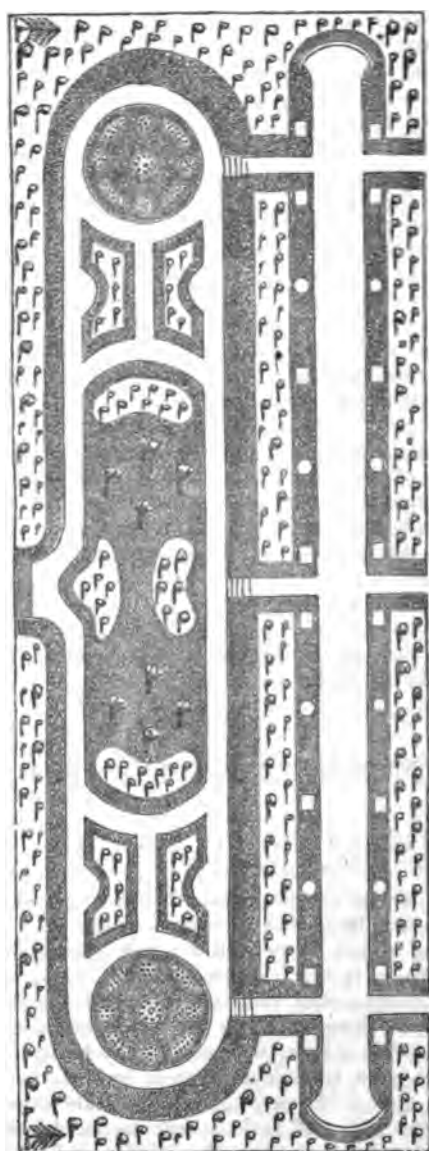
No. 9.

HAVING been engaged to lay out a pleasure-garden as an appendage to a terrace, the ground, consisting of a parallelogram of about four hundred feet in length, and one hundred and thirty-five feet in breadth, the accompanying design has been carried out.

The ground slopes towards the south, consequently an advantage has been taken by raising the broad terrace walk, with its verges and borders of shrubs on each side to a level, and thereby giving them an elevation of some three feet above the other part of the ground, which, it will be perceived, is entered descending by steps.

The design gives an alcove at each end of the sixteen feet wide terrace-walk; and on the verges, eight feet wide sites are indicated for ornamental vases, &c., of various construction for flowers in summer. There is a covered seat at about the middle, and against the southern boundary; and the four small recesses, which may be perceived on the sides of the walks, are intended as places for garden seats. The

100
ft.



clumps on the circular compartment at each end are intended for flowers in masses. Three walks lead out north from the broad terrace-walk, which communicate with small frontage gardens to each house on the terrace, but which it is not thought necessary to show on the plan

A great variety of flowers for the summer are introduced along the front of the shrubbery-clumps and borders, which make the whole look very gay.

From the terrace a beautiful sea view is obtained, having the Plymouth breakwater and a wide expanse of sea in the centre, with Mount Edgcombe on the right, and St. Nicholas Island, with other high lands, on the left, the whole forming one of the most beautiful and interesting marine views in the west of England.

REVIEW.

The Theory and Practice of Landscape Gardening. By JOSHUA MAJOR, Knowsthorpe, near Leeds. London: Longman. 4to, pp. 204.

(Continued from page 165.)

SEATS AND OTHER GARDEN ORNAMENTS.—*Seats* are essential to pleasure-grounds. They may be of various forms and character. Open seats may be made of wire, some of lattice-work, and others of round larch rods, or crooked oak branches. Latticed seats should be formed of four or five screeds of deal, one inch thick by two broad, and six or seven feet long (leaving half an inch between each), and nailed upon three neat trusses or bearers, with or without backs. If backs are attached, they should be neat, light, and ornamental. The rustic open seats, of larch and oak, are formed similar to the other, or by nailing the rods across two long bearers, with or without backs, with feet at each end, in the manner generally practised; always minding to have the cross rods even and easy to sit upon. The two former kinds of seats should be placed in the dress grounds, and those composed of larch and oak in more rural scenery. Covered seats are indispensable structures to afford shelter from rain, sun, and wind. Some should be ornamental, composed of boards and lattice work, or wire, beautified in the inside with cornices and plain or fluted panels. Beautiful ornamental wood-houses are necessary, having windows and doors made to lock up. These may be used as reading-rooms; others may be of a ruder character, yet still architectural, composed of boards, varied by nailing straight rods of larch, or hazel, over them, inside as well as outside, forming panels, or other devices. Fir cones, also, may be used for embellishing the inside. These seats should have low, broad, or old English windows of glass, in diamonds of lead.

Grottos, or Mineral and Shell Seats.—These may be round, octagonal, octagonally ovated, or of fancy forms; built first with brick, then coated over on the outside with small fancy stones, or sea pebbles, fixed in cement or mortar. They should have windows on each side of the door, either gothic or old English; the inside must be panelled, beautified with rich minerals, shells, and pebbles, and mingled with different kinds of mosses, especially the blue (such as are to be found

amongst ling and on trees), and the knotted kind, which is white, when dried, and which grows in moist or wet places. *The moss-house and ling-house* are of a ruder character. The former may be circular, with three open entrances; the other parts may be walled with bricks, and the inside must be lined with rude boards; and, about two feet above the seat, short crooked oak-sticks, about an inch thick, may be nailed on in different-sized irregular figures. These and the rest of the back may be lined in patches of one colour, with various kinds of mosses blending naturally with each other; the roof may be slated and covered with ling, projecting nine inches or a foot over the erection. The inside of the roof should be lined with moss, either of one colour or of different shades (that is, each division between the spars to possess one kind, or shade). The entrances should be formed by four rude trunks of trees five or six feet long above ground, and from nine to fifteen inches in diameter, with low arches springing from their tops. The seats may be covered with plaited silk, ling, or Egyptian matting. The front of the seats may be finished with a bordering of stick-work, four or five inches broad, and the seats themselves should be supported by trunks of trees.

The ling-house may also be round, or an octagonal oblong, formed of six or eight trunks of trees sunk into the ground, or let into large stones. The spaces between them may be filled up with slips of wood, so as to allow the whole to be thickly covered inside and out with ling, leaving an entrance and two open irregular-formed windows. The tops must be covered with slates, and ling over them, projecting nine inches or a foot over the whole building. The trellis and wire seats (which ought to be of the most pleasing designs), are suitable for the flower, garden; rude seats should not be introduced into any of the dress ground. Perhaps the grotto would not be out of character placed in a massive shrubbery. The moss and ling huts will be best placed in wooded or rural scenery.

The Aviary.—An Aviary is a proper object to be introduced into the pleasure-ground. It should be an elegant structure, affording proper compartments for the different families of birds; and while there should be plenty of light, there should also be shady places for their retreat in hot weather. The Aviary should be placed in some part of the dress grounds, where the shrubbery will afford concealment for a small shed in which to place a boiler and fireplace for warming the Aviary with hot-water. The portion of pleasure-ground selected for the Aviary should be planted with ornamental trees and shrubs, blended with lawn of sufficient extent to afford room for the erection or formation here and there of retreats for large interesting birds, cages for small birds, and perches or poles for hawks, owls, parrots, &c., when it is thought proper to have them in the open air. In this way the general combination would be varied and pleasing.

Garden Ornaments of various devices, formed of wire, such as rods of iron topped with wire, in the style of an umbrella, for creepers, wire vases, and numerous other plant-bearers, and basket-work for round beds, may be introduced into the dress grounds; but no rude device, such as tree-roots, tubs, or other rude materials: such are more in character with scenery not so highly cultivated.

Dials.—Dials are very useful objects in pleasure-grounds. They should be placed so as to let the sun's rays fall upon them throughout the whole of the day, and in frequented parts, where there can be a ready access to them. The junction of two walks diverging from each other would be a very suitable position; also in front of a green-house, or of any other ornamental structure.

Vases and Urns are suitable ornaments for placing on the terrace wall of the mansion, in front of green-houses, on each side of steps, and in any other places connected with buildings. Vases may be placed with propriety in dress ground, on the gravel, at the junction of two walks diverging from each other, in order to finish the point of grass dividing the walks. They should be furnished with plants in pots, placed inside, so that they may be replenished at pleasure; and the earth and pots should be covered with moss, which will give a neat and clean appearance, as well as prevent the roots of the plants from drying so fast as they would do if they were exposed to the sun and wind.

Statues are very interesting objects in kept grounds when introduced occasionally, and assembled in groups according to their relative characters. The obvious intention of such appendages is to recall to mind personages and events which transpired in by-gone days, and they have therefore a tendency to withdraw the contemplative mind from other interesting objects which are to be found in a flower-garden. On this account, recesses of lawn in shrubby walks are the most proper places for their introduction. If introduced upon the general lawn, they should be so placed as to be a good deal embosomed in shrubs, that they may not present themselves prominently from every point of view, but rather burst suddenly upon the eye on its approach, and thereby create surprise and pleasure.

[To those who are laying out grounds we recommend Mr. Major's work, which will be found to contain much that will be very useful, and prove of great assistance.]—Ed.

MISCELLANEOUS SECTION.

THE LAPAGERIA ROSEA.—The history of the artificial treatment which many of our well-known plants received when first introduced, and when their habits were little known, would afford some curious and instructive details for the gardener. It has hitherto been, and continues to be, too much the practice to consider every rare and valuable plant, upon its first arrival, to be tender, and thus to force upon it a treatment directly opposite to what it in reality requires. In this way many a beautiful plant has languished for years comparatively unknown, until some lucky accident or fortunate neglect has enabled it to develop its true character, and to indicate to the cultivator the exact treatment it required. The plant, whose name gives the title to this paper, seems in a fair way, like a host of its predecessors, to be persecuted with kindness. Hitherto but little success has attended the attempts to cultivate it among the few who are fortunate enough to

possess it. But now that a large number of strong plants has reached this country, there is a chance of its becoming better known; and doubtless the well-known skill of English gardeners will soon succeed in developing its beauties. That its attractions are great there can be no doubt; and there is much probability of its proving hardy with us, at least in the more favoured parts of England. It is a native of a climate where the temperature rarely rises above 65 degrees. Its habitat is moist, shady woods, where it scrambles among the undergrowth, and climbs about the boles of trees; for it is a climber, with dark green leaves, resembling in appearance a *Smilax*, to which it is allied. Its roots are thick and fleshy, like those of the *Asparagus*. In the flowers, however, consists its great beauty. They are bell-shaped pendants, of the richest and deepest rose-colour, and measuring some four inches across—a glowing description truly, but a correct one. Now a word or two about its treatment. Up to the present time failure has been the rule with those who have attempted its culture. Let us endeavour to investigate the causes, and to ascertain the treatment its nature and habit require. Growing naturally in cool, moist, and shady woods, it was scarcely to be expected that when placed in an artificial climate of a directly opposite character, viz., a high and airy temperature, with a strong light, it would exhibit its natural health and vigour. On the contrary, it did exactly what any other plant of a similar nature, and under a like change of condition, would do—it cast its leaves, and otherwise indicated its repugnance to its altered circumstances. If the several attempts that have been made to cultivate it are investigated, it will be found that in proportion as artificial heat has been employed, and strong light permitted, so has failure resulted in an equal ratio. The natural conditions under which it flourishes clearly furnish data upon which to found its artificial management; a cool, moist, and shady situation must be afforded it; strong light it abhors, the direct rays of the sun especially. In an ordinary plant-stove it has proved altogether uncultivable; in a warm greenhouse it has languished, *while in a cool and shady one at Kew it is succeeding well*. From the nature of its roots it is doubtless a plant tenacious of life, and not easily destroyed under ordinary treatment; but, like many other fine plants, it requires peculiar culture for its perfect development. When that has been ascertained, as it soon will, we may expect to behold its noble blossoms developed in our gardens, as in its native woods on the mountains of Valdivia, and the neighbouring countries. And of its hardiness in the open air in this country, if a proper situation be selected, and established plants employed, there is (judging from the physical character of its native country) every probability. In addition to the local conditions—the shade of the woods under which it luxuriates, moisture and medium temperature are prominent features of the tract of country it inhabits. Many parts of Great Britain possess similar characteristics in a corresponding degree.—CRAYON.

[We do not acquiesce in this comparison between the climate of *Lapageria* and that of any part of England. In other respects our correspondent is no doubt much in the right. The plant wants damp, shade, and a mild climate.]—*Gardener's Chronicle*.

FLORAL

OPERATIONS FOR THE MONTH

IN THE FLOWER GARDEN.

AUGUST is proverbially a hot and dry month; it will therefore be highly necessary, during the continuance of dry weather, to administer copious supplies of water. This should be done towards the evening of each day, because the plants have then time to absorb the water gradually, and appropriate such portion as contributes to their well-being. It is only in extreme cases that water should be given in the morning, because it is then so quickly exhaled from the soil, as well as the leaves, that its refreshing and nutrimental properties are almost wholly wasted. Rain-water is best, or that from an exposed pond or tank. Where beds of plants have been repeatedly watered through a rose, the surface of the soil will probably have become *crusted* and almost *impervious* to moisture; consequently they ought to be stirred over occasionally with a small fork. A few annuals, as *Mignonette*, &c., may now be sown to bloom in the autumn, also biennials to bloom next year.

FLORISTS' FLOWERS.—*Auriculas* and *Polyanthus* should be kept in the shade. At this season of the year the plants are often attacked with green fly; dip the plants in a solution of tobacco-water. *Tulips* will have perfected their growth, and should now be taken up, as if allowed to remain too long it invariably acts prejudicially on the bulb. *Ranunculuses* will require to be taken up as soon as their foliage has become withered and dry. *Pinks* may still be piped. *Carnations* and *Picotees*: as the pods are fully formed and ready to open, secure them round with a ring of India-rubber, gutta-percha, or bass, to prevent their bursting on one side. When blown, they should be shaded. Never suffer the plants to flag for want of water. Proceed with layering. *Dahlias* will require *thinning out* freely as they advance in growth. If sprinkled overhead with soft water late in the evening with a fine rose or syringe, their luxuriance will be greatly promoted. *Pelargoniums* that have shed their flowers should be cut down, disrooted, and potted in smaller pots, keeping the plants for a week in a close frame, to assist them in developing their new shoots. *Roses* may now be budded, moist weather being best for the operation. It is of importance that there should be a resemblance between the bud and the stock as to the vigour of vegetative growth, in order to ensure a successful result. If a Rose of slow development is budded on a rampant briar, and all the strength of the latter is turned into the parasitical stranger, health cannot be maintained, nor will a freely vegetating Rose submit to be impeded in its progress by a sluggish stock. Thin away surplus branches from all stocks not budded as early as possible, not to wait a day even, but get the branches strong and healthy.

IN THE FORCING STOVE.

Where stove and greenhouse plants afford suitable cutting propagation must now be pursued; as, generally speaking, it can be practised with the greatest success in the early rather than in the latter part of the year. It should be remembered that the propagation of most plants is facilitated by the employment of bottom-heat and bell-glasses. Stove plants will derive great advantage from a partial shading during the glare of the day, and will be less liable to injury from drought. Many plants that will require shifting, such as *Justicias*, *Clerodendrons*, &c. Give plenty of water at the roots, syringe often in the evening, and keep the floors of the house and every part damp, to assist in maintaining a humid atmosphere. Bulbs of *Amaryllis*, &c., should be put together in a pit or frame, where they will be near the glass, and where the influence of the sun, with a gradual diminution of water, will mature them. Never permitting the foliage to flag is a good criterion as to the quantity of moisture plants require; keep as near that state as possible.

IN THE GREENHOUSE, &c.

As a free ingress of air must necessarily be permitted during fine weather, its rapid circulation, conjoined with active solar heat, must cause a rapid evaporation both from the plants and soil; hence there exists a necessity, under the above circumstances, of watering and syringing frequently. However beneficial a screen may be during bright hot sun, its presence is not required while the sun is obscured. Encourage the growth of *Azaleas* and *Camellias* by keeping them comparatively close (with shade during sunshine), and supplying them liberally with moisture administered by the syringe. Propagate *Roses* by cuttings from those plants which have been forced, and place the plants in a rather shady situation, in order that they may have a period of rest for a few weeks. *Calceolarias* that have ceased blooming should be re-potted; cut off dead tops, place the plants in a situation where they can be shaded from hot sun, admitting it morning and evening. Seed should be sown, so as to have the plants strong, to endure winter; such will bloom next season, and be much more vigorous than plants raised from cuttings. *Cinerarias* also that have done blooming should have the tops cut off, and fumigated in a close frame, as they are often affected with green-fly; after which the plants should be turned out of the pots, and planted in a somewhat shady bed of good soil, in the garden. Sow seed now; the young plants will bloom early next spring. *Epacris*, *Ericas*, &c., now done blooming, may be cut in, to render them bushy. *Chrysanthemums* should now have the leads stopped, to cause the production of side shoots, and make the plants bushy and dwarf. Procure a stock now of any required. Greenhouse plants placed in the open air in pots should have frequent waterings at the under side of the foliage, to destroy or keep down green-fly. Moss laid lightly between the pots keeps the roots somewhat cool, and tends to promote the health of the plants. Occasionally water the moss, if the weather be hot and dry.

BRIEF REMARKS.

DAPHNE ODORA ROSEA.—All winter blooming plants are especially valuable, more particularly so if fragrant. During the last three winters I have had several plants in bloom of the above-named Daphne, and from the first week of November up to the present time they have continued to flower. The plants were purchased at a London nursery, they were dwarf and bushy, and every shoot produced a head of flowers, of a pretty rose colour, and most deliciously fragrant, quite perfuming the greenhouse and sitting-room. The plants I obtained had been raised by grafting scions into the common hardy *Daphne pontica* (growing in pots), same as is done in grafting fruit-trees. This was done, I was informed, at the beginning of April; and, after being grafted, they were put into a hot-bed frame of *gentle* warmth, and being shaded during mid-day, the frame generally kept closed, and in about six weeks they became fully united. When the shoots had pushed a few inches, the lead was pinched off, which induced lateral shoots to push; and by occasionally stopping the leads, the plants had been formed as close and bushy as an Indian Azalea. When the grafts had become satisfactorily united, the plants were removed to a warm part of a greenhouse, their growth was promoted, and attention paid to the *new wood well ripened*; this is essential in order to have the plants to bloom properly; if the wood *does not ripen*, there will not be any flowers. When the plants have done blooming, they are placed in a higher temperature, the new shoots stopped at about five inches long, and this repeated if necessary; by the end of July, or early in August, the plants are removed into a sunny part of the greenhouse, where they have abundance of air, or they are placed in a warm situation in the open air, in order that the wood may be duly hardened. By placing a plant or two in a medium stove early in October, and others in succession, a prolonged blooming period is obtained. I repotted my plants, as soon as the bloom was over, in a compost of equal parts of well-decomposed turfy loam, turfy peat, and leaf mould, with a good sprinkling of silver sand, and a free drainage. The soil is not sifted, but well broken by the hand. Every greenhouse and sitting-room ought to have in it one or more of these lovely plants.—*A London Amateur Plant-grower.*

ON A GARDEN, &c.—I observe, in reading your floricultural work, that many of your correspondents consult each other as to various matters connected with the culture of plants, and the general management of a garden; I am therefore encouraged to hope that I shall receive, through the medium of your pages, some information on a subject which, from my inexperience, somewhat puzzles me. My small vicarage looks upon a straight piece of garden ground, about one hundred and thirty yards in length, and about ninety in breadth. It is my wish to divide this crosswise, so as to have that portion nearest the house entirely devoted to flowers and evergreens, whilst the lower part is made useful as a kitchen garden. I wish to know the most desirable plan of effecting the division in such a manner, that the precise line of separation should be as little discernible as possible. Would a larch paling with creepers be the best mode of managing my object? or would it be best effected by a privet hedge? or, last of all, would evergreens, planted a little out of line, answer the purpose more satisfactorily? I shall feel myself much obliged by an answer to my queries; and my obligation will be increased if you can, at the same time, supply me with a list of the most rapid-growing evergreen creepers. Could Mr. Rutger assist me in his garden designs?—*Northumberland.*

MEXICAN ACORNS.—The period of ripening of the acorns is from September to November, during which season the Oak forests more than usually teem with life, on account of the many animals that are allured by the fruit. They resound with the screeching of numberless parrots, and the noise caused by the cracking of the nuts, which fall to the earth like dense showers of rain, and are eagerly devoured by the Nasua, Procyon, and Dicotyles, and by squirrels. Short regular knocks are heard, which might be taken for those of people at work cutting timber, but which will be found to proceed from a handsome species of woodpecker, which the natives on that account call the carpenter (*carpintero real*), zealously occupied in picking symmetrical rows of holes in the bark of the Oaks, into which it inserts acorns picked up from the ground. In the acorns are lodged unhatched insect eggs; and it is only some time after their maggot has consumed the kernel, that the woodpecker returns to break the nut, and consume the well-fed worm.—*Liebmann, in Hooker's Journal.*

ON SOWING SOME AMERICAN TREE AND SHRUB SEEDS, &c.—I take this opportunity of answering the query of W. Smith, "On some American seeds," in a recent Number. The spring is the best time for sowing these seeds, when a hot-bed can easily be procured for forcing them, although it was always my practice, when I received foreign seeds, to pot them immediately and put them in the greenhouse. I consider that seeds are more likely to retain life in this way than when left above ground, more particularly small seeds, which it is most difficult to keep; and where seeds lie long before starting, when put into a hot-bed the next spring, many of them will come away very quickly. The soil I would recommend for planting these American plants in is a light mould, mixed with one quarter leaf-mould, and some white or grey sand; and if a little peat-earth can be obtained, so much the better. If the seeds do not come up the first season, the pots must not be emptied, but be allowed to stand in the greenhouse or open air, and be replaced in a hot-bed the following spring. When the seedlings are potted out, attention will be paid to the soils peculiar to each genus or species, as to which *London's Catalogue* or *Encyclopædia of Gardening*, or *Cushing's Exotic Gardener*, may be consulted.—*Jacobs*.

INDIAN AZALEAS.—During winter keep them from damp and frost, in a cool situation. As spring approaches increase the warmth, and continue it till the bloom is over, and the new shoots are formed the length required, then place them out of doors, in a shady situation, till the end of September, or a little later if the weather is not wet. They flourish in a compost of equal parts of turfy loam and turfy peat, with a liberal sprinkling of silver sand, and a few bits of charcoal intermixed. Give a free drainage, but do not overpot them, nor break the old ball when repotting. The best time to repot them is immediately the flowers fade, when the new wood has to be encouraged in vigorous growth.—*An Extensive Cultivator*.

ULMIN.—Some time ago we were informed that Ulmin deserves attention in horticultural science from the uses which it is supposed to serve in the vegetable economy; perhaps some of your chemical correspondents will be able to tell what attention has been paid to it. It has been conceived to be an acid, having the power, like this class of bodies, to combine with bases. It nearly agrees in its composition with gallic acid; it is produced in nature in large abundance, and numerous vegetable substances are constantly being converted into it. It is found in great quantities in turf and other vegetable soils, and may be procured by the action of sulphuric and muriatic acids upon various vegetable bodies. Its existence in vegetable earths, manures, and the sap of plants, seems to indicate its importance in vegetation, and may, perhaps, tend to resolve some questions relating to the yet unexplained action of manures, and thus lead to some useful practical conclusions.

We are also informed that it is a black or dark brown substance which exudes from the bark of the elm and several other trees, and which appears to be contained in most barks. It may also be obtained by digesting elm bark in boiling alcohol, and afterwards in cold water, by which various more soluble substances are removed; the residue is then digested in an aqueous solution of carbonate of potash; it acquires a brown colour, and yields a precipitate when neutralised by muriatic acid, which, after being washed and dried, is Ulmin. It is very sparingly soluble in water, but readily soluble in solutions of the alkaline carbonates. According to Berzelius, it is a compound of 567 carbon, and 433 hydrogen, and oxygen in the ratio to form water. He terms it ulmic acid, and considers it identical with the brown matter of vegetable mould and turf, and as contributing materially to the nutriment of growing plants.—*Peter Marcgrave*.

SKELETONS OF LEAVES.—To form these, soak the leaves, when at their full growth, in a tub of rain-water. They must remain in the water just as long as to rot the parenchyma (or soft green part) without sensibly affecting the nerves. This state can only be ascertained by trying and examining, and subjecting them to the next process, when it will be easily seen if they need further soaking. To clear away the parenchyma, lay the leaves on a smooth board, and pump upon them; any slight extrusions of parenchyma may be poked out with a needle, but the stream of water is the only mode of doing the work safely and expeditiously. Place the skeletons in a moderately strong solution of chloride of lime, three days and press them. If a large number of leaves are to be done at once, it would be as well to remove them from their tub, and allow them to remain for a few hours in a vessel of pure water before bringing them to the pump, as the smell is apt to be offensive.—*J. Parnis*.

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Lilium zigadicum.



ILLUSTRATIONS.

LILIUM GIGANTEUM.—THE GIGANTIC LILY.

" Queen of the field, in milk-white mantle drest,
The lovely lily waved her curling crest."

" The lily's height bespoke command,
A fair imperial flower;
She seem'd design'd for Flora's hand,
The sceptre of her power."

ALCIAT tells us, in his celebrated elegant emblems, that celestial beauty is represented surrounded by a glory, half of the head hidden in the clouds, and as holding a Lily in one hand, and a compass and a ball in the other. He further observes, "that Beauty is represented with a garland of Lilies and Violets."

As all nations agree in making the Lily the symbol of purity, modesty, and elegance, it is the fit attribute of beauty; and, perhaps, no inhabitants of the earth blend the Lily with the Rose as the fair daughters of Britain.

In the Hebrew language the name Susannah signifies a Lily. St. Dominic is always represented as holding a Lily.

The beauty and delicacy of the Lily has been celebrated by the writers of all ages, from the time of Solomon to the present day. It was regarded by Jesus Christ as being more splendid than the great king of Jerusalem in all his gay apparel, who stated, "even Solomon in

all his glory was not arrayed like one of these ; " and on this account we cannot behold the Lily without feeling a kind of reverence for the flower, mixed with our admiration for its elegance of form and purity of colour :

" In loveliness beyond compare
It toils not, spins not, knows no care ! "

The Lily appears to have been a favourite flower with the ancient Greeks ; and in the wedding ceremonies of the modern Greeks, the priest is supplied with two chaplets of Lilies and ears of corn, which he places on the heads of the bride and bridegroom as emblems of purity and abundance. All the wedding party are then crowned with flowers, and as they pass by the houses of their acquaintance, flowers, nuts, and cakes are strewed from the windows.

The Romans seem to have regarded the Lily with equal admiration, as we learn from Columella that it was preserved or planted in baskets :

" Then plant the various flow'rs, these earthly stars,
And Lilies, which in baskets long preserve
Their verdure."

Pliny mentions the Lily as next to the Rose in point of beauty.

The common White Lily was so familiar in the time of Queen Elizabeth, that Gerard speaks of it as a native plant ; he says, " Our English White Lillie groweth in most gardens of England." He farther informs us, that he received roots of White Lilies from Constantinople, under the Turkish title of " Sultan Zambach," which signifies " Sultan's great White Flowers."

There are several varieties of the so-called " White Lily of our gardens," as that with the flowers striped or blotched with purple ; those with the leaves striped or edged with yellow or white ; another with double blossoms, and one having drooping flowers. The double blossomed are not so fragrant as the single ones, and the common white is more esteemed than any of the varieties.

The Orange Lily (*Lilium bulbiferum*) is of great antiquity in our gardens, and one of its greatest ornaments when in bloom. Some years back a plant of the Orange Lily produced double blossoms, but we have not heard of its permanency. There are several varieties now of a more dwarf habit, and with blossoms of various colours, all beautiful and ornamental.

The above Lilies have flowers that are *bell-shaped*, or *funnel-bell shaped*, and of this section of Lilies there are many other large, superb, flowering kinds, particularly *L. japonicum*, *Wallichianum*, *Eximium*, &c., all highly meriting a place in every collection.

The Turk's Cap-formed flowers (the petals are reflexed), comprise an extensive section of Lilies, all of which are elegant and beautiful.

The *Martagons* have long been ornaments of our gardens. The first, we are informed, was obtained from the Turks under the Turkish title of " Zufiniare," and the Venetian name of " Marocali." Dioscoroides mentions that these kinds of Lilies grew wild near Laodicea, a city of Asia, now called Ladik, and also near the celebrated city of Antioch,

in Syria. Gerard states (in 1596), "This plant groweth wild in the fieldes and mountaines, many daies journeis beyond Constantinople, to which it is brought by the poore pesants, to be solde for the decking up of gardens. From thence it was sent, among other bulbs of rare and daintie flowers, by Master Harbran, ambassador there, unto my honourable good lord and master, the Lord Treasurer of England, who bestowed them upon me for my garden." Amongst other odd names for this flower, we frequently find it called the Lily of Nazareth, which seems to indicate that it came originally from the east to Constantinople.

In 1629, Parkinson, the herbalist and apothecary to king Charles I., describes that he possessed a dozen different kinds, viz., the white, the white spotted, the blush, the spotted Canada, the imperial, the red Constantinople, the red spotted, the Hungarian bright red, the yellow, the yellow spotted, the purple, and the double flowered.

The *Lilium chalcidonicum* (Scarlet Martagon) is one of the prettiest ornaments of our flower-gardens at the present day, and is not as extensively grown as it merits.

The *Lilium tigrinum* (Tiger Lily) is a most beautiful one, and should be grown in every flower-garden of mixed herbaceous plants.

Lilium lancifolium (the Japan Lilies) are but of recent introduction, and some of them ought to be grown in every garden, being quite hardy, as well as in every greenhouse or conservatory; they are elegant and strikingly ornamental. There are other Lilies which have reflexed flowers, which we cannot now enumerate, want of space forbids.

The *LILIUM GIGANTEUM*, which we now figure, belongs to the bell or funnel-shaped section of flowers. It has been truly denominated "the Prince of Lilies." Dr. Wallich discovered it in India, in moist shady places on Sheopore, in Nepal. He states, "This majestic Lily grows sometimes to a size which is quite astonishing; a fruit-bearing specimen of the whole plant, which is destined for the museum of the East India Company, measures full ten feet high from the base of the stem to the top. The flowers are delightfully fragrant, much like those of the common White Lily.

Messrs. Cunningham, Comely Bank Nursery, Edinburgh, received seeds of this Lily about seven years ago from Major Madden, and in their establishment it first bloomed in Great Britain.

Major Madden states, "The *Lilium giganteum* is common in the damp thick forests of the Himalaya, where I frequently met with it. It there grows in rich black mould, the bulb close to the surface, at from 7,500 to 9,000 feet above the level of the sea, where it is covered with snow from November to April. The stems, being hollow, are commonly used for musical pipes. The fruit ripens in November and December."

Messrs. Veitch exhibited a plant in bloom at a recent exhibition in the Horticultural Society's garden, which many of our readers saw. Subsequently we saw at their nursery, at King's road, a number of these majestic Lilies in bloom in the greenhouse, each plant being six feet or upwards high. The leaves, heart-shaped, being about sixteen inches long and a foot broad, and the girth of the stem at the lower part seven

to eight inches in girth. Each plant had from eight to a dozen flowers; and now (August) they have a like number of large seed-vessels (fruit of some persons), which, on our visits, we find rapidly increase in size.

In Messrs. Veitch's nursery at Exeter, this Lily was tried during the last winter in the open ground, and was not in the least affected by the frost, even when they had seventeen degrees of it. It merits a place in every likely flower-garden, succeeding the best when grown in a somewhat shady place, and in every greenhouse or conservatory.

The true *Lilium Japonicum*, too, is a very superb species, having very large white blossoms; also the *L. Wallichianum*, which has immense large white flowers. Both these species highly merit a place in every collection of this fine genus. There has been a Lily, which is known as *L. Brownii*, sent out by some persons as *L. Japonicum*, which is much inferior to the true species, and purchasers should be careful in inquiry as to the certainty of possessing the true kind.

NOTES ON NEW OR RARE PLANTS.

AZALEA AMENA, BRIGHT-FLOWERED.—This pretty species was sent from Shanghai, in China, by Mr. Fortune, who states it had been brought from the far-famed city of Soo-chow-foo. Mr. Fortune sent the plant to Messrs. Standish and Noble, of Bagshot; and it has proved to be perfectly hardy, growing and blooming freely in the open air, and not injured during winter. It forms a neat dwarfish bush, a foot high, and blooms very profusely. The flowers are produced in terminal corymbose-heads, each blossom is about an inch and a quarter across, bell-shaped, of a rich crimson-purple, with a deep orange centre. The leaves are small, about the size of those of the common box. It is a lovely little shrub, and merits a place in every greenhouse, or suitable shrub border outdoors.—(Figured in the *Botanical Magazine*, 4728.)

CANTUA BICOLOR, TWO-COLOURED.—(Synonyms, *C. ovata*; *C. tomentosa*; *Periphragmus uniflorus*). In our volume for 1849, we noticed that much confusion existed relative to the *Cantuas*, and in the *Botanical Magazine* of last month, where a fine plate of *Cantua bicolor* is given, Sir W. J. Hooker observes, "We are indebted to Messrs. Veitch for living plants of this *Cantua*, which flowered in April, 1853. It has, indeed, already appeared in the volume of 'Paxton's Magazine of Botany,' for 1849, under the name of *C. bicolor*, as a plant recently introduced by Messrs. Veitch from Peru, but though a *new* name is given to it, the 'Authorities and Synonyms' quoted under it are '*Cantua tomentosa*, Cav., *Periphragmus dependens*, R. et P., *Cantua dependens*, Pers., and *Cantua buxifolia*, Juss.'—all except Persoon, giving figures illustrative of what they intend; and all these are considered by us the same as, or *mere varieties* of *Cantua buxifolia*. Here, however (figured in last month's Number), is quite a different-looking plant, with a comparatively *short* and quite *yellow tube* to the corolla, flower *solitary*, and never *drooping vertically*, and raised from seeds

from the same country as our *C. buxifolia*. Yet fearing the present plant might prove to be a *cross* with some other kind, we wrote to Mr. Veitch; who replies, "The only *Cantuas* we have bloomed are *C. bicolor* (here figured), *C. pyrifolia*, (fig. 4386. *Botanical Magazine*.) and *C. buxifolia*, (fig. 4582, *Botanical Magazine*.) Whether *C. bicolor* be a *true species* or not may be doubtful, but its beautiful flowers will recommend it to every cool stove. Cavanilles describes his *C. ovata* as the "*Corolla cœrulea-rubens*;" and Ruiz and Pavon (their *Periphragmus uniflorus* being the same), as having the "*tube of the corolla purple, and the limb (five divided end of blossom) violet*." The *C. bicolor*, is a small *erect-growing shrub*, leaves hairy, about an inch long, and the edge (margin) quite *entire* (not notched), oval-shaped, rather tapering to the leaf-stalk. Each blossom has a tube an inch long, and nearly half an inch through. The limb (end) is an inch across, divided into five segments. Tube yellow, and limb scarlet within and without. It merits a place in every floral establishment.

DICHOISANDRA LEUCOPHTHALMOS, WHITE-EYED.—A native of Brazil, introduced into our gardens by Messrs. Henderson's, of Wellington-road Nursery. The leaves are about six inches long. The flowers are produced in racemes, and each blossom is an inch and a half across, of a blue-purple with the lower half of each petal white, constituting a large white eye. It is a stove plant.

FRITILLARIA OXYPETALA, SHARP PETALLED.—From the Himalaya, growing at an elevation above the sea of twelve thousand five hundred feet. The stem grows a foot and a half high, terminating in a solitary flower, the sepals a lilac-purple having a green keel outside, with the *inside* sprinkled with purple dots. Each blossom is at first *half-campanulate* (not the real bell-shape of our garden Fritillarias), but at length spreads out more fully. It is very neat and handsome.—(Figured in the *Botanical Magazine*, 4731.)

RHODODENDRON NIVEUM, SNOWY-LEAVED.—Dr. Hooker discovered it in Sikkim-Himalaya. It has recently bloomed in the Royal Gardens of Kew. The young leaves are covered with a white down. It is a smallish shrub, leaves about five inches long, oval-shaped. The flowers are borne in a close terminal head, bell-shaped, about two inches across. Outwardly of a yellow-lilac, inside pale-lilac, blotched with deep lilac, and having five deep, blood-purple spots. The plant blooms very freely.—(Figured in the *Botanical Magazine*, 4730.)

VACCINIUM OVATUM.—**SYNONYME, V. PRUNIFOLIUM.**—A neat shrub, growing about two and a half feet high, a native of North-west America, where it was discovered by Menzies. Subsequently it was sent by Douglas to the Horticultural Society. It is perfectly hardy, and a very ornamental "evergreen." The leaves are about the size of those of a broad-leaved myrtle, glossy. The flowers are produced in short racemes from the axils of the leaves, each having from four to eight small blossoms, of campanulate-globular form, similar to those of *Andromeda floribunda*, of a waxy yellowish-white, tinged with pale pink or deep rose. A valuable small-sized shrub, blooming profusely, and merits a place in every shrub border.—(Fig. in *Bot. Mag.*, 4732.)

CALYSTEGIA SEPIUM VAR. INCARNATA.—Most of our readers know

the *Calystegia sepium*, or wild, large, white-flowered *Convolvulus* of our hedges. The variety we now remark upon has similar large flowers of a beautiful rose-colour, shaded with a deeper tint, and has a white stripe up the centre of each of the five divisions of the blossom, very handsome, and highly ornamental. The plant is a hardy, twining, herbaceous perennial, and trained against a trellis, wall, or in the open border, to a stake six to nine feet high, it produces a gay appearance; blooming, too, from May to the end of the summer.—(*Fig. in Van Houtte's Flora.*)

NIPHEA ALBO-LINEATA, VARIETY RETICULATA.—This genus belongs to the Gesneriaceæ. In a previous Number we described *N. albo-lineata*, and stated that its leaves were green, with white lines; viz., the principal, middle, and side ribs were white, and were very handsome. Our present plant has leaves similarly marked, with the addition of the numerous veins crossing between those principal ribs, also white, giving the whole a beautiful silvery-netted appearance. Each leaf is about three inches long and two broad, oval-shaped. The flowering stems rise four to six inches high, terminating in a head of six to eight flowers. Each blossom is three-parts of an inch across, white, with a small yellow eye. It is a stove-plant, and entitled to a place in every one. It first bloomed in the establishment of M. Linden, in Belgium.—(*Fig. in Van Houtte's Flora.*)

ACHIMENES CHIRITA.—A new species introduced from Mexico, and bloomed in Mr. Van Houtte's establishment; who states that its flowers far exceed in size any other *Achimenes* he possesses, and of the richest blue tinged a little with red. It is very similar to those of the *Chirita moonii*. A magnificent species.

ACHIMENES SIR TREHERN THOMAS.—The flowers are very large, of a brilliant carmine-red colour, and exceedingly showy. This and the following superb kinds are also possessed by Mr. Van Houtte.

A. CAMILLE BROZZONI.—A beautiful rose with a white and purple centre; singularly pretty.

A. LOUIS VAN HOUTTE.—Rich rosy-purple with a white centre; very handsome.

A. MRS. RENDATLER.—Lilac-purple with a yellowish-white centre; flowers very large and handsome.

A. NAPOLEON ROSSI.—Lively violet-purple with a pale yellow centre.

A. CUPREA.—A pretty brown with a yellow centre; very singular and pretty.

A. MACKOYII.—A bright rose marbled with a deeper rose and white, and the centre a deep purple; very beautiful.

GLOXINIA BELLE CLYMENE.—White with a large deep blue throat, and the entire marbled with blue; very beautiful.

GLOXINIA DR. PLANCHON.—The flowers grow erect, similar to those of *G. Fyiana*, of a rich red with a spotted throat; very handsome.

G. LEONIE VAN HOUTTE.—The flowers are of similar form to *G. Fyiana*, of a beautiful rose with a pure white throat; very distinct and handsome.

CLEMATIS PATENS, *variety SOPHIA*.—Very similar to *C. azurea grandiflora*, but has the addition of green stripes, which divide the limbs of each petal in regular parts. It is very handsome.

WEIGELIA AMABILIS (Synonyme, *W. Metelerkampii*).—It is one of the most beautiful shrubs ever introduced from Japan. Its foliage is very fine, and its beautiful rose-coloured flowers are produced in profusion. It is said to be quite hardy.

CANNA WARSCEWICZII.—The flowers are of a brilliant crimson, and its large leaves are stained with deep red. The handsomest of the genus.

PSAMMISIA SCLEROPHYLLA.—It is a fine shrub of the natural order Ericaceæ, Vaccinaceæ, introduced from New Grenada. The leaves are thick, oblong-oval shaped, about four inches long and two broad. The flowers are produced in lateral racemes, having seven or more in each. Each flower has a bellying-shaped tube, about an inch long and half an inch through, of a beautiful rosy scarlet, terminating with one-fourth of its length of a bright yellow. It requires protection during winter, if grown in the open ground. It is a most charming shrub, in the collection of M. Linden, in Belgium.

PÆONIA ALBIFLORA, *variety SOUVENIR DE GENDRUGGE*.—Belonging to the herbaceous section of these noble flowers. Each flower is about eight inches across. The outer row of petals is of a fine "satin rosy-red colour," and the interior portion of strap-shaped curled petaloides, are of a fine yellow with the centre of a reddish-buff colour; they are fragrant.—It is figured in Van Houtte's *Flora*. A beautiful acquisition.

SPATHODEA COMPANULATA (Synonyme, *Bignonia tulipifera*).—This most magnificent flowering plant was discovered in 1786, by Palissot de Beauvois, on his voyage to the coast of Guinea, and Thonning afterwards describes it under the name of *Bignonia tulipifera*. Mr. Whitfield, however, sent it to our own country from Sierra Leone, and it bloomed in the stove in June, 1852, at Chatsworth. It is a very robust plant, having leaves, ovate-lanceolate, four inches long. The flowers are produced in terminal branching racemes. Each flower, bell-shaped, is nearly five inches across, of a rich brilliant orange, with a golden-yellow centre spotted with red, and each petal has a golden-yellow margin. The inside of the blossom at first is tinged with bright rose, contrasting strikingly with the full expanded blossoms. It is a superb plant, and merits a place in every stove. It would be a fine plant for training up a pillar, or coiled round a wire framework.—(Figured in Van Houtte's *Flora*.)

AZALEA GLORY OF SUNNING-HILL.—The blossoms are large, of a pretty rosy-pink, and the upper segments beautifully spotted with red. Some of its flowers become semi-double. It is very pretty. This variety, and the two following, we have recently seen grown as standard plants, on three to four feet stems, with large heads, and in profuse bloom; they were very ornamental.

A. IVERYANA.—Flowers large, of thick substance, and fine form; white striped with carmine, and sometimes having stripes of purple. One of the very best, and ought to be grown in every collection.

A. GLEDSTONNI.—Flowers good form, medium size, white with pale red stripes; very pretty.

A. ROSALIE.—Flowers a bright orange, and the upper segments spotted with purple; good form, and very showy.

A. ALBA MAGNA.—Flowers very large, of fine form, and the purest white; very excellent.

LEPTOSIPHON LUTEUM.—This new annual species is very pretty. The flowers are of a primrose-yellow, with a deeper yellow centre. It is a free bloomer, growing four to six inches high, and very ornamental.

AZALEA STRIATA FORMOSISSIMA.—Flowers white, very distinctly striped and spotted with lilac, and particularly handsome.

SPIREA VENUSTA.—A hardy herbaceous perennial, growing two to three feet high. The flowers (in the way of Meadow Sweet) are in large branching panicles of a beautiful rose-colour. It is exceedingly neat, handsome, and showy.

DELPHINIUM TRISTE.—A most singular species, growing from two to three feet high. The flowers are of a dark olive-brown colour.

WINDOW GARDENING.

BY MR. T. B. TANTON.

BEING much interested in floricultural pursuits, I am gratified to see window gardening reaching such a favourable crisis, which in a great measure must be attributed to the numerous and able articles which has of late appeared in the columns of periodicals relating to the science of floriculture, and I hope ere long the ingenuity of the "fair sex," under whose superintendence this department of domestic pleasure is usually carried out (or attempted), will have attained this great desideratum. In order to contribute my mite towards this object I beg to offer a few observations, which, first of all, I must make our cultivators aware of the demonstrative fact which is so often overlooked; viz., that plants, like all members of the animal kingdom, require a season of rest, which they obtain *diurnally*, but which is too often neglected *annually*; therefore, when plants have attained their full maximum of development, which will be at autumn, then begin to give them rest by withholding water from them, commencing gradually with the drawing in of the days at that period, which has been ordained for their safeguard, and keeping them in a dry state during the winter season, only watering them when necessity requires. Where deciduous plants are grown for such purposes, nature will direct the steps of the amateur as to when he is to begin again to water copiously, which will be at the return of the days, at which time they begin to enjoy a plenteous supply of that necessary element, "light," which is so essential to the health and vigour of all plants, and which exerts such great power over their absorbent properties, and by this means promotes the flow of sap. It is also the property of "solar light," when striking upon plants, to cause the decomposition of carbonic acid, and fixing the carbon, and giving out oxygen, thereby promoting the growth of plants. Light is also

the agent whereby colour is supplied to plants, as we find in the absence of it they take up again the oxygen from the atmosphere, and recombine it with the matter they contain, to be liberated again at the return of light. Then with such physiological facts before us we must confirm it as a deficiency of light, combined with inattention as regards the proper period of watering and resting, that causes window plants, in most cases, to look so sickly and forlorn. Therefore, where success is required, attention must be given to the above-stated facts; in addition to which, in potting or shifting such plants, care must be taken not to break the ball, thus avoiding mutilating the roots. Also to procure some good staple loam, with peat, and well-decomposed leaf mould, mixing them well together, with the addition of a little silver sand to keep the mass porous and open for the free transmission of water, which must not be suffered to stagnate about the roots; therefore to avoid this, good draining is necessary in the pots previous to shifting. At the same time the use of pans should be discarded, and in watering, take care to give each plant a thorough soaking with pure water, that is, "rain water," which contains a portion of ammonia, carbonic and muriatic acid, together with other impregnations which are taken up by plants as food, and which are obtained by the rain in its descent through the atmosphere to the earth. It must also be borne in mind much of the success is dependent on the time of watering: thus in the summer months it should be done after sunset; the three remaining seasons, viz., autumn, spring, and winter, before sunrise. How often do we see these ornaments of nature watered, watched, nursed, and petted, during the hottest part of a summer day; the result of which is that they are killed with kindness; which deaths, to the discomfiture of the owners, are thus occasioned through the misapplication of the principles which direct, conduct, and generalise vegetation in general.

CULTURE OF PRIMULA SINENSIS (OR PRAGENITENS).

BY MR. JOHN BURLEY, OF WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON.

THE admirers of all plants that bloom in winter well know the value of this free blooming, useful plant, clothed as it is with its white, purple, rose, lilac, and crimson flowers; increasingly valuable by being produced in such profusion, and for the length of time each plant, if properly managed, continues to display its beauty. It is generally known that all the single-flowered varieties are propagated by seeds; in fact, that is the usual plan for their production, *though they will increase by cuttings*. If those persons requiring any for winter blooming will attend to the following directions, I am sure they will grow and bloom them to such a state of perfection as is but rarely seen.

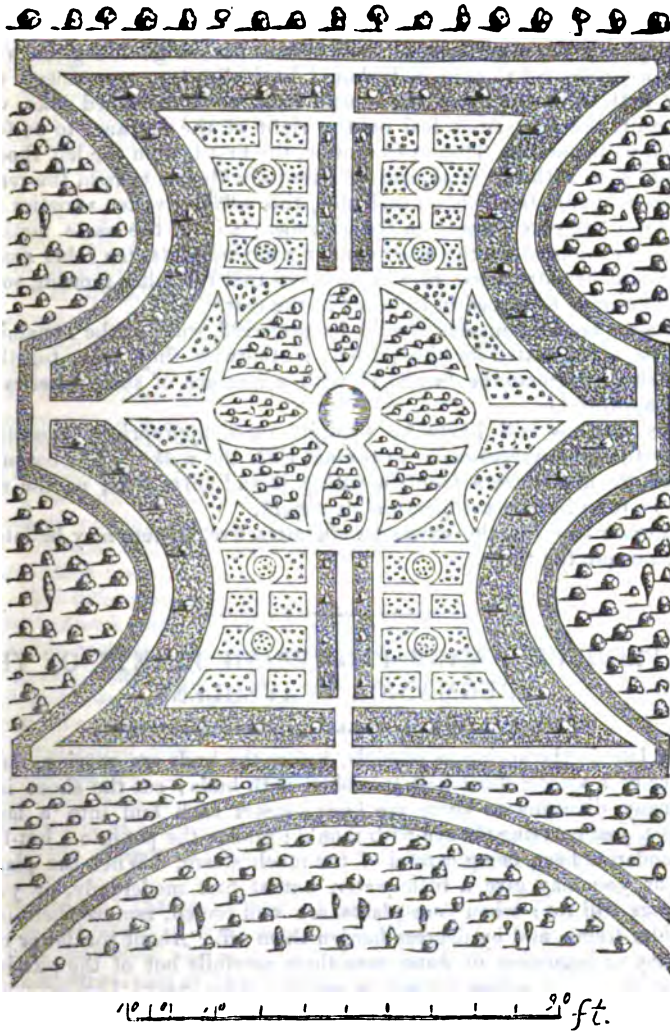
As before remarked, they are best increased by seeds; the sowing may take place in *May, June, July, and August*, so as to have a *succession*. The soil most suitable for the seeds to be sown in is a light sandy one, *not too fine*. The seeds must be sown on the smoothed sur-

face, and very *slightly* covered, *if at all*, for it will be found that the first watering will sufficiently settle the soil around them. They may then be placed in a close frame, or, better still, a warm greenhouse, and keep the soil just moist until the plants appear; they may be so served until the young plants can be removed from the seed-pan with the thumb and finger, when they may be potted in thumb-pots, one in a pot, placed in a warm frame, and kept shaded for a few days until they make fresh roots, when the shading may be removed, and air gradually admitted. When the pots are sufficiently full of roots to require a shift, they may have one into large 60-sized pots; and the following soil—one-half leaf mould, one part good hazel loam, and one part sand peat, and small charcoal. The pots must be well drained; and if a little rough soil is placed over the crocks, so much the better, as it will prevent the drainage from being choked. As the plants advance in growth, and where large plants are required for blooming, they may have successive shifts into larger pots, increasing the strength of the soil as the plant increases in size. After the several pottings they may have had, they should be kept in a frame or greenhouse, and as near the glass as possible, in order to keep them dwarf, and at times give them as much air as possible.

As winter draws near, the batch sown in May will have made fine plants; and as they are the first to look forward to for bloom, they should be removed from the frames, and placed on a shelf near the glass in the greenhouse, *removing all premature blooms from them*, when, with a slight watering of weak liquid manure, they will soon be in bloom, and the colours much improved by this liquid. Plants of the successional sowings, as they advance in growth, may be duly brought on as before recommended, so as to take the place of the first batch as they go out of bloom. The double-flowered are very fine, and have a charming effect when well grown. The same kind of compost as is recommended for the single will suit them. They are easily propagated by division of the plant; viz., take off a side-shoot and place it in a thumb-pot filled with sandy loam and leaf-mould, and place it in a close frame for a few days until it roots, when it may be treated as directed for seedlings. There is a splendid variety of this charming plant about to be introduced; the flowers are of an enormous size, a single purple colour, and of extra substance. The blossoms are three to four inches across; its name is to be "*Magnum Bonum*," and rightly named. I can strongly recommend it to all lovers of Primulas, as it will prove all that we could wish for in these useful flowering plants. It is to be sent out in September or October of this year by *Messrs. E. G. Henderson and Son, of Wellington Nursery*. There is very little to retard the growth of Primulas when healthy; but the following *hints* may be useful:—*Smoking them destroys the green-fly*. If kept *too moist* in the fall of the year, the leaves sometimes damp off; but they should immediately be removed, as they have a *tendency to cause the plant to damp off*. The plant should never "be swamped with water," as no plant is so liable to suffer from such usage as this. Never use soil for potting-in in a *fine state*, as by frequent watering it gets sour, and the plants turn yellow.

PLANS OF FLOWER-GARDENS.—By T. RUTGER, Esq.

No. 10.



SHOULD any lady-florist or amateur floriculturist desire to show skill in arranging flowers according to their colours, when planted in masses, perhaps the accompanying design may be considered appropriate, by allotting the smaller beds for such a purpose. Much has been

written about planting in masses, both in lines and groupes, to be so disposed as to harmonize, in reference to the colours of the flowers introduced. There is a very good article on the subject in vol. xx, p. 130, of the *Cabinet*, and which it would be well for all to study, who may not think themselves competent to judge, both as it respects the colours of the flowers, and height of the plants.

Supposing the small beds on each side of the design now given were to be appropriated to masses, I should be inclined to recommend the beds, both right and left of the central walk, to be furnished alike, viz. supposing the first front bed on the right at the entrance to be furnished with the Tom Thumb Geranium, the first bed on the left should be furnished with the same, and so likewise with the beds in the rear; and as there are ten beds on each side, this would give ten varieties for the compartments nearest to the entrance; and if the same method should be adopted for the other similar compartments, ten other varieties might be introduced, care being taken that the taller growing sorts should always be placed in the beds in the rear.

If more beds for masses should be preferred, some of the remaining may be appropriated for the purpose; otherwise they may, together with all that remain, be furnished with a mixture of such varieties as most approved of.

Box edgings will likely be thought most appropriate, excepting where the grass verges come in contact with the walks. The bason in the centre may have a fountain with gold and silver fish; or the site may be used for any architectural ornament.

In order to make the exterior walk attractive, flowers may be introduced inside the verge.

TO PRODUCE DWARF FLOWERING PLANTS OF THE BRUGMANSIA SUAVEOLENS.

BY JAMES CLARKE, GARDENER, EAST-HOUSE, LIVERPOOL.

As late in the spring as possible, before the buds are moving, make choice of a strong shoot well furnished with buds; cut the shoot into as many divisions as there are buds; insert each bud into a large 60-pot, just covering the eye with mould; plunge the pot into a hot-bed of moderate heat, being careful of too much steam. When the plants appear you may give a little water, but at first moderately, or your cuttings will rot; when your plants are well-rooted, remove them into a colder frame, and by degrees harden them off. About the latter end of May or beginning of June, turn them carefully out of the pits into the open ground, where the soil is not too rich; water them occasionally, but not too often. About the beginning of September they will be dwarf plants, and will show for bloom: as soon as this is perceived, they must be taken up carefully, with as much mould as possible, potted into pots suitable to their roots, and set in a cold frame, keeping them close until recovered from being potted, when they will flower freely, and form a striking object for the greenhouse.

REMARKS ON THE FORMATION, &c., OF GRAVEL WALKS.

BY G. B. N.

I have been a subscriber to your invaluable Magazine for the last five years, and have derived considerable benefit from reading of the different methods of cultivating almost all kinds of showy and popular plants. The Magazine is so strictly a Floricultural one, that I am afraid of getting out of its boundaries with the subject I am about to bring before your readers; however, I will try to keep betwixt the flower-border and the grassy-lawn, and pursue my course along the gravel walk.

GRAVEL WALKS.—I have read a good deal, and heard more, on the formation, &c., of these essentials; but I think that as it regards the cost of construction, a practice of my own is much cheaper than any other that has fallen under my notice. Mr. Beaton has detailed a deal about walks, in the *Cottage Gardener*, which is useful, but his methods "are expensive," especially so to those persons who have to hire.

Last winter, some of the walks in the establishment I am gardener at had become very dirty, and in that state were liable to more than an ordinary crop of weeds, and as I intended covering the walks with fresh gravel in the spring, I had the top taken away to a heap, not intending to lay it on again. However, owing to the water-springs being so high during the entire of the winter and spring months, not a pit could be opened to obtain gravel from. Finding I should have a considerable crop of weeds, and have but little gravel for my walks (being obliged to have them completed as early as possible), I sent for a load of *gas-lime*; but before laying it on the walk, I put some sand along the side of the box and grass edgings, so as to form an embankment, and then laid a thin coating of gas lime over the walk, broke all the lumps by having the roller drawn over them, and then laid on the old gravel which had been taken away, and which, on being replaced, turned out quite fresh again. After being properly spread over the walk, it was raked and rolled down. The following morning, I saw a vast quantity of worms laid dead on the surface of the walk, and after the first shower of rain there were quantities more; but since that time I have not seen either a worm or a weed upon the walks, and they are now as even and hard at the surface as ever Mr. Beaton saw at Shrubland Park or any other place.

The load of "gas-lime" cost one shilling, and that sufficed to cover walks to the length of one hundred and forty yards and five feet wide.

I have not seen any injurious effects either to the box or grass, though a great part of the box was but newly planted. Occasionally after a shower of rain I have the roller drawn over the walks, but it does not disturb the surface, neither does the wheeling of manure, &c., in the barrow make the least impression. The walks, in all respects, are everything that can be desired for such invaluable accommodations to be.

I hope the remarks will be of use to some readers hereof. Care must

be taken not to have the gas-lime too near the box or grass, but be kept at least three inches from either. I am confident whoever adopts the method will find it more than answer the expectation. I must observe too, that the *finis* in the gravel are all turned blue by the gas-lime, which gives the walks a pretty appearance, being blue and white.

A FLOWER FOR YOUR WINDOW.

NAMES OF FLOWERS AND MYSTERY OF THEIR BEAUTY.

BY PENELOPE FOSTER.

IN the window beside which I am writing this article, there is a Geranium shining with its scarlet tops in the sun, the red of it being the more red for a back-ground of Lime-trees, which are at the same time breathing and panting like airy plenitudes of joy, and developing their shifting depths of light and shade, of russet brown and sunny inward gold.

It seems to say, "Paint me!" So here it is.

Every now and then some anxious fly comes near it: I hear the sound of a bee, though I see none; and upon looking closer at the flowers I observe that some of the petals are transparent with the light, while others are left in shade; the leaves are equally adorned after their more opaque fashion, with those effects of the sky, showing their dark-brown rims; and on one of them a red petal has fallen, where it lies on the brighter half of the shallow green cup, making its own red redder, and the green greener. I perceive, in imagination, the scent of those good-natured leaves, which allow you to carry off their perfume on your fingers; for good-natured they are, in this respect, above almost all plants, and fittest for the hospitalities of your rooms. The very feel of the leaf has a household warmth in it, something analogous to clothing and comfort.

Why does not everybody (who can afford it) have a Geranium in his window, or some other flower? It is very cheap; its cheapness is next to nothing if you raise it from seed, from a slip, or buy one; and it is a beauty and a companion. It sweetens the air, rejoices the eye, links you with Nature and innocence, and is something to love. And if it cannot love you in return, it cannot hate you; it cannot utter a hateful thing, even for your neglecting it; for though it is all beauty, it has no vanity: and such being the case, and living as it does purely to do you good and afford you pleasure, how will you be able to neglect it?

But pray, if you choose a Geranium or possess but a few of them, let me persuade you to choose the scarlet kind, the "old original" geranium, and not a variety of it,—not one of the numerous diversities of red and white, blue and white, ivy-leaved, &c. Those are all beautiful, and very fit to vary a large collection; but to prefer them to the originals of the race, is to run the hazard of preferring the curious to the beautiful, and costliness to sound taste. It may be taken as a good general rule, that the most popular plants are the best; for

otherwise they would not have become such: and what the painters call "pure colours," are preferable to mixed ones, for reasons which THE CREATOR has given when He painted the sky of one colour, and the fields of another, and divided the rainbow itself into a few distinct hues, and made the red Rose the queen of flowers. Variations of flowers are like variations in music, often beautiful as such, but almost always inferior to the theme on which they are founded—the original air. And the rule holds good in beds of flowers, if they be not very large, or in any other small assemblage of them. Nay, the largest bed will look well, if of one beautiful colour; while the most beautiful varieties may be inharmoniously mixed up. Contrast is a good thing; but we should first get a good sense of the thing to be contrasted, and we shall find this preferable to the contrast, if we are not rich enough to have both in due measure. We do not in general love and honour any one single colour enough, and we are instinctively struck with a conviction to this effect when we see it abundantly set forth. The other day I saw a little garden wall completely covered with Nasturtiums, and felt how much more beautiful it was than if anything had been mixed with it; for the leaves, and the light and shade, offer variety enough; the rest is all richness and simplicity united, which is the triumph of an intense perception. Embower a cottage thickly and completely with nothing but Roses, and nobody will desire the interference of another plant.

Everything is handsome about the Geranium, not excepting its name, which cannot be said of all flowers, though we get to love ugly words when associated with pleasing ideas. The word "Geranium" is soft and elegant; the meaning is poor, for it comes from a Greek word signifying a crane, the fruit having a form resembling that of a crane's head or bill. Crane's-bill is the English name of Geranium, though the learned appellation has superseded the vernacular. But what a reason for naming the *flower*! as if the fruit were anything in comparison, or any one cared about it. Such distinctions, it is true, are useful to botanists; but as plenty of learned names are sure to be reserved for the freemasonry of the science, it would be better for the world at large to invent joyous and beautiful names for these images of joy and beauty. In some instances we have them; such as Heart's-ease, Honey-suckle, Marygold, Mignonette ("little darling"), Daisy (day's-eye), &c. And many flowers are so lovely, and have associated names otherwise unmeaning so pleasantly with one's memory, that no new ones would sound so well, or seem even to have such proper significations. In pronouncing the words Lilies, Roses, Pinks, Tulips, Jonquils, we see the things themselves, and seem to taste all their beauty and sweetness. "Pink" is a harsh, petty word in itself, and yet assuredly it does not seem so, for in the word we have the flower. It would be difficult to persuade ourselves that the word *rose* is not very beautiful. "Pea" is a poor, Chinese-like monosyllable; and "Briar" is rough and fierce, as it ought to be; but when we think of *Sweet-Pea* and *Sweet-Briar*, the words appear quite worthy of their epithets. The poor monosyllable becomes rich in sweetness and appropriation; the rough dissyllable also, and the sweeter for its contrast. But what

can be said in behalf of Liver-wort, Blood-wort, Dragon's Head, Devil's-bit, and Devil in a Bush?

The names of flowers in general, among the polite, are neither pretty in themselves, nor give us information. The country people are apt to do them more justice. Goldy-locks, Ladies'-fingers, Bright-eye, Rose-a-rubie, Shepherd's-clock, Shepherd's-purse, Sauce-alone, Scarlet-runners, Sops-in-wine, Sweet-William, &c., give us some ideas either useful or pleasant. But from the peasantry also come many uncongenial names, as bad as those of the botanists. Some of the latter are handsome as well as learned, have meanings easily found out by a little reading or scholarship, and are taking their place accordingly in popular nomenclatures,—as *Amaranth*, *Adonis*, *Arbutus*, *Asphodel*, &c.; but many others are as ugly as they are far-fetched; such as *Colchicum*, *Tagetes*, *Yucca*, *Ixia*, *Mesembryanthemum*; and as to the *Adansonia*s, *Brow-allias*, *Koempferias*, *John Tompkinsias*, or whatever the personal names may be that are bestowed at the botanical font by their proud discoverers or god-fathers, I have a respect for botanists and their pursuits, and wish them all sorts of little immortalities except these, unless they could unite them with something illustrative of the flower as well as themselves. A few, certainly, I should not like to displace; *Browallia* for one, which was given to a Peruvian flower by Linnæus, in honour of a friend of his of the name of Browall; but the name should have included some idea of the thing named. The *Browallia* is remarkable for its brilliancy. "We cannot," says Mr. Curtis, "do it justice by any colours we have." Now why not have called it *Browall's Beauty*, or *Browall's Inimitable*? The other day I was admiring an enormously beautiful apple, and was told it was called "*Kirk's Admirable*," after the gardener who raised it. I felt the propriety of this name directly. It was altogether to the purpose. There was use and beauty together,—the name of the raiser, and the excellence of the fruit raised. It is a pity that all fruits and flowers, and animals too, except those with good names, could not be passed in review before somebody with a genius for christening, as the creatures did before Adam in Paradise, and so have new names given them worthy of their creation.

Suppose flowers themselves were new,—suppose they had just come into the world, a sweet reward for some new goodness, and that we had not yet seen them quite developed; that they were in the act of growing; had just issued with their green stalks out of the ground, and engaged the attention of the curious. Imagine what we should feel when we saw the first lateral stem bearing off from the main one, or putting forth a leaf, how should we watch the leaf gradually unfolding its little graceful hand; then another, then another; then the main stalk rising and producing more; then one of them giving indications of an astonishing novelty, a bud! then this mysterious lovely bud gradually unfolding like the leaf, amazing us, enchanting us, almost alarming us with delight, as if we knew not what enchantment were to ensue; till at length, in all its fairy beauty, and odorously voluptuousness, and mysterious elaboration of tender and living sculpture, shone forth

———— "the bright consummate flower?"

Yet this phenomenon, to a mind of any thought and lovingness, is what may be said to take place every day; for the commonest objects are only wonders at which habit has made us cease to wonder, and the marvellousness of which we may renew at pleasure, by *taking thought*. Last spring, walking near some cultivated grounds, and seeing a multitude of green stalks peeping forth, I amused myself with likening them to the plumes or other head-gear of fairies, and wondering what faces might ensue; and from this exercise of the fancy fell to considering how true, and not merely fanciful, those speculations were; what a perpetual reproduction of the marvellous was carried on by Nature; how utterly ignorant we were of the causes of the least and most disesteemed of the commonest vegetables; and what a quantity of life, and beauty, and mystery, and use, and enjoyment was to be found in them, composed out of all sorts of elements, and shaped as if by the hands of fairies. What workmanship—with no apparent workman! What consummate elegance, though the result was to be nothing (as we call it) but a radish or an onion, and these were to be consumed or thrown away by millions! A rough tree grows up, and at the tips of his rugged and dark fingers he puts forth,—round, smooth, shining, and hanging delicately,—the golden apple, or the cheek-like beauty of the peach. The other day I was in a garden where Indian corn was growing, and some of the cobs were plucked to show me. First one leaf or sheaf was picked off, then another, then another, then a fourth, and so on, as if a fruit-seller was unpacking fruit out of papers; and at last we came, inside, to the grains of the corn, packed up into cucumber-shapes of pale gold, and each of them pressed and flattened against each other, as if some human hand had been doing it in the caverns of the earth. **BUT WHAT HAND!**

The same that made the poor yet rich hand (for is it not His workmanship also?) that is tracing these marvellous lines, and which if it does not tremble to say so, it is because Love sustains, and because the heart also is a flower which has a right to be tranquil in the garden of the All-wise.

MANAGEMENT OF AZALEAS.

BY MR. WILLIAM MAY, HOPE HOUSE, BARNET.

THE splendid specimens which are exhibited in and round London, of the *Azalea indica*, being much superior to any I have seen at the country shows, induces me to send the particulars of culture.

As soon as the plants have done flowering, if shifting is necessary, prepare some compost mould for them in the following proportions:—two-thirds bog earth, one-third well decomposed tree-leaf mould, and one-twelfth sharp silver sand: they must not be sifted, but well chopped and broken with the spade; any lumps remaining may be broken with the hand. Having a pot a size larger than the one the plant to be shifted has been growing in, and washed clean inside and out, then proceed to pot the plant, taking care the drainage is well attended to, for upon this depends in a very great measure the success of the plant. In potting, I think it an advantage to place the centre of the ball rather

lower than the mould at the outside of the pot, and form as it were a little basin inside, as by this means the whole mass of roots is benefited by the water given from time to time; and if the drainage is effectually performed, the water will pass through as freely and quickly as when the plant is potted high in the pot. The plants being potted, place them in the stove, where attention must be paid to watering when necessary. They will be very much benefited by being syringed all over at least once a day; and in sunny days they will require to be syringed three or four times each day. With this treatment they will grow amazingly, and in the course of six or eight weeks will have made shoots from three to nine inches in length. They must be kept in the stove till the flower-buds for the ensuing year have attained the size of a small pea, which can easily be ascertained by feeling the ends of the shoots; they should then be placed in the greenhouse for ten days or a fortnight to harden, when, if the weather is suitable, they may be placed out of doors in a cool airy situation, till the time for taking in the general stock of greenhouse plants.

Where the plants have bloomed so profusely as almost to exhaust them, tie some moss round the principal stems, and keep it constantly moist; this will cause them to break regularly and grow freely.

Where there is not the convenience of a stove, I would recommend that the plants be kept in the greenhouse till the buds are well set; and should this happen so late that there are but two or three weeks for them to have the advantage of the open air, still setting them out will be found highly serviceable.

If the foregoing particulars are attended to, the roots will be emitted in such abundance as completely to fill the pots; and instead of being liable to perish from over-watering, it will be almost impossible to give them enough, the close mass of thirsty roots absorbing an almost incredible quantity of moisture. Treated as above described, all the species and varieties of this splendid tribe will answer the most sanguine wishes and expectations of the cultivator; and I think it is impossible to bloom some of the sorts properly, as *Smithii*, and others, under any other mode of treatment:—instead of producing here and there a flower, as is often the case, the plants will be one entire mass of bloom, expanding their brilliant flowers from two and a half to three inches across, and commanding the admiration of all who behold them.

Where it is required, and the stock of plants is sufficient, the blooming season may be protracted from September till June, affording charming ornaments for autumn, winter, and spring.

BUDDING ON THE COMMON CHINA ROSE.

BY A COUNTRY CURATE.

HAVING seen the common China Rose (*Rosa indica*) flowering in the greatest luxuriance most part of the year, when trained against a trellis, wall, and even the open border, I have often felt surprised that buds of many of the more choice kinds were not inserted in their branches, as all who have any knowledge on the subject are aware that, as stocks, the China Roses afford every chance of success.

In selecting buds, it must be remembered that all the different varieties will not grow with equal success; it will be necessary, therefore, to choose the free-growing kinds, or such as seem to partake of the same habit, and require similar treatment to the common China Rose. The *Rosa Semperflorens*, Boursoult, Noisette, &c., seem to flower better and grow stronger than when supported by their own natural roots. The Moss Rose, Tuscany, and others of similar habits, will not flower more than two or three years at the farthest; for the shoots they are budded upon soon begin to decay, which renders it necessary to insert a succession of young buds annually, and to cut the old ones away. Some of the free-growing kinds will flower the same year they are budded; these should be cut back to two or three eyes in the winter, and also the shoots they are budded upon to one eye above each bud; those sorts which are of slower growth will require the shoot leaving several eyes above the bud, as it is apt to die down when cut close to the bud. Budding Roses on a trellis is more to be recommended than budding the different sorts on standards. A Standard Rose makes an object in itself, and I think is more calculated to please without mixture on the same plant; but with regard to the trellis, it is the greatest object to have a regular succession of flowers of different colours in perfection throughout greater part of the year on the same plant.

GENTIANA BAVARICA.


DR. GRIESEBACH, in his excellent article "*Gentianaceæ*" of the *Prodromus*, 1845, enumerates no less than 153 species of Gentians,

grouped, according to the singularly diverse habits and floral structures, in fourteen natural sections. These species are mostly Alpines, strangers to Africa and New Holland, rare in the Indian Peninsula, but abounding in the elevated zones of the Himalayan Chain, the temperate and cold regions of Europe, in Siberia, and of North America, though but few are found on the mountains of Central America or the Andes, and a very small number are inhabitants of Chili, Patagonia, New Zealand, and Van Diemen's Land.

Gentiana Bavarica is not, as its name would appear to indicate, a species particular to Bavaria, as it is found in many places of the mountain regions of Central and Southern Europe, as far as Naples and the borders of Spain. It is a very charming plant, of dwarf, bushy habit, a neat and compact foliage of lively green. The flowers are produced abundantly, and are of a bright deep azure blue, which it is beyond the art of the painter to imitate. To those fond of Alpine plants, or wishing for a really good thing to place on a clump of rock-work, this *Gentian* will be found a great acquisition. It will be found to flourish best in a strong loam.

CULTURE OF WHAT ARE USUALLY CALLED CAPE GERANIUMS.

BY A LONDON EXHIBITOR.

I EMPLOY the term *Geranium*, as being the most popular, though the proper botanical term is *Pelargonium*, and its English name *Stork's-bill* (*Pelargos*. *Stork*), the fruit or seed having a beak like a stork's bill.

The Cape species, which are under consideration, have "thick, fleshy, tuberous roots," and some of them have "short stems," but many have no stems, the leaves and flowers springing immediately from the roots. Some are exceedingly beautiful, as *P. longiflorum*, *niveum*, *undulæ-florum*, *roseum*, *astragalifolium*, *asarifolium*, *dipetalum*. Another section of them have stems, as *bicolor*, *echinatum*, &c. All of them are pretty, some very handsome, and where there is convenience, are *well worthy* of cultivation. Unfortunately, they require considerable care to cultivate them successfully, and hence they are much out of fashion; which I am sorry for, as I am pretty certain, if they were better known, and oftener seen, they would be more in request.

A good greenhouse is the best situation for them during winter and spring; when in a growing state, they should be as near the glass as the arrangement of the house will admit. Plenty of air must be given on all favourable days. They should be frequently syringed with cold water, and be smoked with tobacco, whenever insects make their appearance.

During the growing season, they require watering pretty freely, but as soon as they have done flowering, and their leaves begin to turn yellow, decrease the quantity of water gradually; the best method to do this will be to water once in three days, then once a week,

then once a fortnight, and, lastly, once a month, by which time they will be completely at rest, when no water must be given to them till they begin to grow again, which may be looked for about February or March. When at rest, any situation where they can be kept moderately dry and cool, will do for them. Heat, light, and moisture not being necessary.

The best time to increase this section of *Pelargoniums*, is just before they begin to grow. Take off a small tuber or two where they can be spared from each plant, and pot them into as small pots as they can be placed, just to cover them; place them in gentle heat, giving but little water until they begin to grow, when they may be removed among the established plants, and the ordinary culture given; they may also be increased by seed, which, however, they do not produce so freely as the shrubby species.

The best soil for those plants is an equal mixture of loam, peat soil, and dung; they require also well draining, by placing plenty of broken potsherds at the bottom of each pot at least one inch thick.

The section that have stems.—Many of those are rather difficult to cultivate, and, in consequence, are comparatively scarce; but if the following directions are attended to, the difficulty will be surmounted.

The species under this head are represented by *Pelargonium tricolor*, *bicolor*, *elatum*, *pendulum*, *tetragonum*, *fulgidum*, *elegans*, *flexuosum*, *quinquevulnerum*, *ardens*, &c.

As they are all shrubby species, they require watering all the year, though always carefully, for if the soil gets sodden with water for a length of time, it is fatal to the plants. They also require greenhouse treatment during winter and spring; in summer they require placing out of doors in an open situation, screened from high winds, and set upon a bed of ashes so thick, as to prevent worms from getting into the pots; keep them clear of weeds, tied up neatly, and regularly watered during dry weather. Pot them into larger pots when they require it; the best season for which operation is the month of April.

The compost I have found them to grow best in is loam, peat earth, vegetable soil, and sand in equal parts,

To propagate them, take youngish cuttings off about the month of May; fit some bell or small hand-glass to such a number of pots as may be required; fill them half full of broken potsherds, rough bits of turf, or anything that will permit the water to pass off freely; put in upon them as much of the compost as will fill the pots up to one inch of the rims, and fill up to the top with pure sand, then give a gentle watering, and insert the cuttings, giving more water to settle the sand close and firm to them. When pretty dry, cover them with the glasses, and place them in a gentle heat; pot them off when struck, and keep them close and warm until they have struck root again; then give them the ordinary treatment, as to situation, air, watering, potting, and so forth. Some of this section seed also, but not freely

MISCELLANEOUS SECTION.

ARRANGEMENT OF PLANTS, &c.—The time for housing greenhouse plants, &c., being near, I forward a few remarks on the necessity of a reform in their arrangement, that the objectionable stiff surface which has been almost universally adopted from time immemorial may be done away with, and be succeeded by a natural arrangement. A few remarks, I think, will point out the necessity and advantages of improvement.

Suppose an artist of eminence introducing into one of his pictures a group, of whatever size, of human beings, cattle, or various vegetable forms, we should in an instant perceive the absurdity and want of taste displayed, if he placed them in rows, so that the objects in each row ranged about the same height upon the canvas, those farthest off being of course highest. No variety of costume, figure, features, or accompaniments, would atone for such a radical defect. And yet this would only be in conformity with the practice of arranging plants, whether on stages or borders, in regular successional rows, the highest at the back.

But if, on the other hand, we imagine the artist scattering his figures about, so as to make their relative heights and general arrangement as varied as possible, some one, two, three, or more of them having particular prominence given them, and either rising higher in the background or advancing further forward in front, and the whole insensibly blending and harmonising, so as to form but one great assemblage; though, perhaps, partially broken up into several different subordinate groups; every one, however unable to appreciate the process of art by which all is accomplished, will be pleased with the general result, and will glance from object to object, and from group to group, with a heightened relish for the entire performance, from the gratification which each part has occasioned.

And thus it is with a well-arranged shrubbery, border, or plant-house. There is enough in the details to occupy the attention and please the eye throughout the entire collection, while the attractiveness of the whole is rendered all the greater by the interest of the several parts. It is not all seen at once, but leads on the spectator from point to point, presenting to him, in however limited a space, continually fresh parts. There are no true or regular lines; but all is freeness, variety, and grace. And all the best specimens of the finest and most peculiar form stand out in relief, and are thoroughly seen.

The objections to the more common method of arranging plants, so as to slope gradually and uniformly from the back to the front of the border or stage, are, that the effects just specified are entirely reversed. The eye takes in all at one look, and there is no inducement to the spectator to pass along the front and examine it minutely. Being all placed at a regular angle, also, the plants lose their individuality. There is no play of outline, no wavy line of beauty, no patches of intermingled sunlight and shadow; the finest and most beautiful plant ranks on a level with the most insignificant, and is only equally seen. In fact, it is merely the tops of each specimen that present themselves to the observer, and whatever there may be remarkable in either habit, foliage, or flowers, is, to a great extent, lost by being mingled with the common mass.



FLORAL

OPERATIONS FOR THE MONTH

IN THE FLOWER GARDEN.

NOW sow seeds of annuals, as *Clarkia*, *Collinsia*, &c., in small pots, well drained, and keep them in a cool frame, or other suitable place during winter; then turn the plants out, entire (or split the balls) into the open borders, in March or April, and they will soon be in bloom, and ornament the garden at an early period. Seeds of many kinds, *now sown* in the *open border*, generally survive the winter, and bloom vigorously early the next season. *Carnations*: the layers should be taken off, severing them *at a joint* as near the root as possible. Only a few of the bottom leaves should be trimmed off to admit the compost to settle closely round the stem, and that no leaves may rot inside the soil, and be likely to damage the main stem. The compost in which to pot them must not be rich, or the plants will be likely to grow too vigorous, and become what florists term too gross. Equal portions of year-old turfy loam and leaf-mould, with a small proportion of sand mixed therein, is rich enough, and of a dryish texture, and the plants keep healthy in it if otherwise duly attended to. In potting, place two layers in each pot. Put them in a cool frame for about ten days, keeping the lights closed, and shaded from mid-day sun; this contributes to an immediate striking root afresh; afterwards they may be fully exposed in a sheltered spot, having a thick floor of coal-ashes or boards to place the pots upon, in order to prevent worms entering. *Pinks*: beds of them may still be made, and the earlier the more successful: dig into the bed four inches in thickness of old manure; do it a week or so before planting, and plant as early in the month as you can. *Pansies*: beds of them should be made for next spring bloom. Pot some of all the best kinds in small pots, to be placed in a cool frame during winter. If the sowing of the seeds of biennials, as *Scabious*, *Canterbury Bell*, *Brompton* and *Queen Stocks*, &c., has been neglected, they should be attended to as early as possible. *Verbenas*: runners should be potted in small pots, a third filled with potsherds, and the rest with good loamy soil, placing them in a close cool frame for ten days, shading from mid-day sun; after which gradually expose them to open air. Attention to them should be *immediate*. *Bulbs*, as *Hyacinths*, &c., are now to be had, and the sooner they are potted, the more vigorous they will bloom. *Chinese Primroses* should be encouraged for winter blooming. If mildew appears on any plants, dust them with sulphur immediately. *Camellias* may be grafted; the operation may be performed with the greatest success by pursuing the method the French call "*graffe en placage*," which is merely inserting that portion of wood that includes a bud and leaf cut longitudinally into a corresponding cleft in the stock. The grafted subjects should be

plunged in bottom heat, and kept covered for at least a month. *Roses* may still be budded. Nail to the wall young shoots of *Banksian Roses*. Cut clean away those not wanted. Prepare beds of *Sweet Violets*. *Roses* for forcing too.

IN THE GREENHOUSE, &c.

Cuttings of nearly all plants may yet be successfully struck; but the earlier they are put in the better. Towards the end of the month take in the tenderer greenhouse plants; but the house should be white-washed, &c., previously, if required. Repot *Chrysanthemums*, if the pots they are in be full of roots; give manure-water once a week. *Cinerarias*: pot off singly the offsets, also seedlings. Seed may still be sown, but as early as possible. Cuttings of bedding plants should be put in directly. Pot off singly rooted cuttings of *Pelargoniums*, &c. Cuttings of *Tea Roses*, *China*, *Bourbon*, &c., soon strike root at this period.

BRIEF REMARKS.

HYBRIDIZING THE PANSY.—Grow the plant in a pot, and keep it remote from others. Before the flower or flowers you intend to have seed from is fully blown, clip off the anthers, and when fully expanded, obtain pollen from another flower of equal merit in form, or, in some respects, superior in colour, &c., and impregnate those which are to produce the seed. F. C., I observe, asks for information, and the above mode of procedure I have adopted successfully for several years.—*Thomson*.

ON SALPIGLOSSIS DYING OFF, &c.—Last season I raised about one hundred plants of different species and varieties of *Salpiglossis*. I kept them in pots, in a light and airy greenhouse; in spite, however, of all my exertions, the plants died, either wholly or a portion of a plant, and I could not ascertain the cause. They grew and flowered vigorously till the disease happened to them, and then in a day or two they were prostrate. The plants were not over-potted, and had plenty of drainage at the bottom, as well as a good open soil. I sprinkled them occasionally over the tops when it was done to the other plants. If some correspondent of the *Cabinet*, who may be acquainted with a preventative, would inform me, I should esteem it a favour conferred on *Jucenis*.—P.S. I have a number of young plants raised this spring, I am anxious to have them succeed till winter.

A HEDGE OF CAMELLIAS.—As a proof of the mildness of our Dorsetshire climate, I may mention that at Lower Lytchett, a few miles from hence, may be seen in the open air a hedge of *Camellias*, more than ten feet high and twenty or thirty yards in length, of most luxuriant growth, and which is a perfect blaze of blossom and far more healthy and vigorous than I have ever seen the plant in any greenhouse; near it also stands an *Araucaria* nearly thirty feet high.—*The Rev. Frederic Fane, in the Naturalist, July 1853*.

TO PREVENT HARES OR RABBITS DESTROYING TREES, SHRUBS, OR OTHER PLANTS.—Cut pieces of calico to about six or eight inches square, and dip them in melted brimstone, then put each piece in a cleft-top stick of about half a yard high, and place them here and there amongst the trees, shrubs, or flowering plants, as *Carnations*, *Pinks*, &c. during winter. It is a certain preventative from injury by these animals.

GUANO APPLIED TO PLANTS IN POTS.—If the guano be good, one ounce to six gallons of water will be strong enough for *hard* wooded plants, and for *soft* wooded ones an ounce and a half to the same quantity of water. Care must be taken to stir the guano well when put into the water, so that it be diffused throughout.—*A Successful Practitioner*.

APHELIXIS.—These charming everlasting-flowering plants are easily propagated. Cuttings of firm young wood root freely enough, as do also bits of ripe wood having several shoots. They should be put in early in spring, planted in very sandy peat, covered with a bell-glass, placed in a temperature of about fifty-five degrees—and, if properly cared for as regards water, and guarded from damp, they will soon emit roots. If ripe pieces of wood are used, they will be longer in emitting roots than young cuttings, but they will form plants sooner.

[illegible]



Calystegia sepium incarnata.



OCTOBER, 1853.

"No spring or summer's beauty hath such grace
As I have seen in one autumnal face :
For autumn tinges every fertile branch
With blooming gold, and blushes like the morn ;
And leaves are tinged with beauty far above
Spring's gayest hues, or brightest, freshest green ;
Their blinding shades of every tint are seen,
Pale amber, half transparent in the ray
Of the bright sun ; while others shine in more gorgeous colours."

ILLUSTRATIONS.

CALYSTEGIA SEPIUM, VARIETY INCARNATA.

(*Synonyme, Convolvulus sepium incarnata.*)

THE name CALYSTEGIA is from *kalyx*, calyx ; and *stega*, a covering, in allusion to the large covering which the Calyx forms. The genus was first formed from some of the Convolvuluses, and belongs to the Convolvulacææ. The name *Convolvulus* is derived from the Latin, *Convolvère*, to entwine or wind about, referring to the habit of some of the species twining their stems round other bodies, and *binding* them :

"Convolvulus, expand thy cup-like flower,
Graceful in form, and beautiful in hue."—BARTON.

The form of the blossom of a Convolvulus is considered equal, if not superior to, every other flower. The gracefully-shaped cup, or chalice, is like the end of a French horn, and which, in the reversed state, resembles the elegant roofs of the Chinese pagodas.

The Convolvulus opens and closes its monopeta'ous flower with folds similar to those of a parasol, they are never expanded during night, or in wet weather, in order that the anthers and stigma may be guarded from the humidity of the air, and on this account it is named by the French, DAY BEAUTY.

"Like flow'rs, which, shrinking from the chilly night,
Droop and shut up; but, with fair morning's touch,
Rise on their stems, all open and upright."

Perhaps we have not a native plant which displays a more beautifully-formed corolla than the GREAT BINDWEED (*Calystegia*, or "*Convolvulus*" *sepium*), which entwines itself so firmly among the shrubs of our hedgerows until it reaches the top, where it expands its monopetalous flowers in a dress that challenges the spotless snow for purity, and would demand more general admiration were it less common.

The handsome plant we now figure is a variety of *C. sepium*, Great Bindweed, and it originated in North America, from whence it was introduced into our own country. It is a hardy perennial, growing freely, and blooming profusely. It forms a very handsome object when trained up a pillar, stake, trellis, or allowed to spread over the branches of a young tree, which has been cut up for the purpose. The spreading and drooping shoots in profuse bloom form beautiful festoons. The roots of this variety do not spread so much as the common hedge plant, nor is it so rampant with its shoots.

The roots are easily kept within any desired bounds, by planting in a large-sized garden-pot, and not allowing the soil to be higher than two or three inches below the rim, but cover the soil and rim of the pot with moss. Thus grown, the plant can be managed so as to grow to a suitable size for a stake six or eight feet high, and the larger the pot the higher the plant will rise. We have seen it grown in narrow boxes, which are bought for a few pence each of the general grocers, and those sunk in the ground endure for many years, care being taken the roots are confined therein. We had it for training as a low hedge around a large oval bed, and, to keep it in due bounds, a channel was formed around the inside of the bed next the grass, and the bottom and sides were formed of the usual kind of brickwork, and being filled with soil, the plants succeeded very admirably, and bloomed from May to November, every season. The plants were trained to a neat wire trellis, a foot high, and every day during summer and autumn were in beautiful bloom.

Plants grown in large pots, and sunk at a yard, or two yards apart, around a bed, would succeed, giving due attention to watering.

There is also a variety that has flowers of a lavender-lilac colour, with five broad stripes of white; they are very large and handsome. Both varieties are beautiful, and merit a place in every flower-garden.

NOTES ON NEW OR RARE PLANTS.

BRASSAVOLA LINEATA.—THE LINE-LEAVED.—A South American orchid, which was purchased at one of the sales of Mr. Warsowitz's plants in London, in 1852, by Messrs. Jackson, of Kingston. It is an Epiphyte, having short, creeping stems, and the flowers are produced in pairs, drooping. The sepals and petals are very narrow, three inches long, of a pale yellowish-green; sepals slightly tipped with red. The

lip is very large, heart-shaped, white.—(Figured in *Botanical Magazine*, 4734.)

GILIA LUTEA (Synonyme, *Leptosiphon lutea*).—This pretty hardy annual is figured in the September *Botanical Magazine*. Each blossom is about half an inch across, of a bright sulphur-yellow, with an orange eye. The flowers are borne in terminal heads, and being numerous, when grown in masses are showy. The stems rise from six to ten inches high. Sir W. J. Hooker states, "We follow our able countryman, Mr. Bentham, in uniting *Leptosiphon* with *Gilia*, from which it seems to differ in scarcely anything but the length and tenuity of the tube of the flower.

IMPATIENS JERDONIÆ.—MRS. JERDON'S BALSAM.—Sent from the East Indies to the Royal Gardens of Kew, by Mr. M'Ivor, where it has bloomed this season in the greenhouse. The stems of the plant, in form, are much like those of *Cacalia articulata* (the commonly-called candle-plant), jointed, gouty, of a dark purple colour. The leaves are only upon the upper parts of the stems, oval, about two inches long, of a bright green. The flowers are produced at the extremities of the shoots; each having from four to ten blossoms. Sepals green; lateral ones yellow, and the anterior *petal* very large, forming a curved, compressed, red sack, with a short *spur*. Each blossom is about an inch across.—(Figured in *Bot. Mag.* 4739.)

RHYNCHOSPERMUM JASMINOIDES.—JASMINE-FLOWERED.—An evergreen shrub, a native of China; Mr. Fortune found it at Shanghai. It has hitherto been grown in our stoves. It is an erect plant, with an inclination to be a climber. The plants bloom freely even when young, and before the climbing character appears. The flowers are white, somewhat resembling those of the white Jasmine, and are borne in corymbose heads. They are as deliciously fragrant as the Jasmine.—(Figured in *Bot. Mag.* 4737.)

The following plants we have recently seen in bloom, and are likely to flower through the season:

CAMPANULA PEREGRINA.—A hardy perennial. The flower stems are from two to three feet high, and half the length is adorned with its fine flowers. Each blossom is two inches across, bell-shaped, of a pretty purple-blue with a striking dark eye. The leaves are heart-shaped, four inches long. It merits a place in every flower-garden.

PENTSTEMON ROSEUM.—The floral stems grow to about three feet high, are numerous branched, and bloom in profusion. Each flower is about an inch and a half long, tube outside of a rich rose, and the inside of a dark purple colour. It is very handsome and ought to be in every flower-garden.

CAMPANULA FORMOSA.—The floral stems are from two to three feet high. Each blossom, funnel bell-shaped, is about two and a half inches across, and is semi-double; the outer row of petals is blue and the inner row white. It is very pretty and ought to be in every flower-garden.

CAMPANULA CELESTINA.—Its numerous slender stems grow about ten inches high, bearing a profusion of rich blue bell-shaped flowers,

drooping. Each blossom is an inch long. It is exceedingly neat and pretty.

CAMPANULA CARPATICA LONGIFOLIA.—It is a profuse bloomer, and each blossom, bell-shaped, an inch long; white. Very pretty.

DRACOCEPHALUM ARGUNENSE.—A hardy, spreading, bushy, perennial plant, growing a foot high, and blooming profusely. The leaves are narrow. The flowers are of a bright blue, and the tube of each blossom two inches long. It is very handsome, meriting a place in every flower-garden.

PENTSTEMON AZUREUM.—A bushy plant of this fine species, having twenty-six spikes of flowers. The strongest were nearly three feet high, and the others two feet and upwards. Two-thirds of each floral stem was in profuse bloom, and its bright blue flowers tinged slightly with rose, rendered it very beautiful and ornamental. When properly cultivated it is exceedingly pretty, and ought to be in every flower-garden.

PENTSTEMON THEMESTERAN.—The plant is bushy, growing two to three feet high, and blooming very profusely. Each flower is about two inches long, of a bright rose colour. Very pretty, distinct, and showy.

POTENTILLA MECKLENIENSIS.—This very beautiful plant grows two to three feet high, and blooms in profusion. Each flower is nearly two inches across, and has ten petals, which are so neatly arranged as to form an entire *full circle*. They are of a pretty light yellow with a rich orange-coloured eye. It is exceedingly pretty.

IMPATIENS HOOKERIANA.—This is one of the erect-growing, shrubby-like Balsams, belonging to the class now grown in the shrubbery. It was introduced into this country from Ceylon, by Mr. Thwaites. We saw it in bloom last season at the Royal Gardens of Kew. The flowers are produced in terminal heads of from three to six in each. Each blossom has what is termed a flat face, two and a half inches long by one and a half broad; white, beautifully marked with streaks of crimson. The outside of the flower and the long spur are of a pale yellow. It is very handsome, and flourishes in the greenhouse, or during summer in the open border in sheltered situations.—(Figured in Van Houtte's *Flore*, 831.)

PELARGONIUM AUGUSTE MIELLEZ.—In our August Number, we mentioned some of the very handsome varieties which had been raised from seed by the gardener of Mr. James Odier. This is another of his seedlings, of remarkable beauty. The upper petals have a large clouded blotch of nearly black crimson, with a broad belt of bright crimson and a light margin. Each of the three lower petals have a very distinct dark spot edged with orange, and the white ground of the rest is beautifully chequered with orange-red and have a white margin. The centre of the blossom is tinged with violet. Each flower is about two and a half inches across, and of good shape. The plant, too, is a very free bloomer. It is very ornamental, and a charming acquisition as a bedding variety, or for the greenhouse.—(Figured in Van Houtte's *Flore*.)

OXALIS VERSICOLOR.—This old "greenhouse plant" was introduced into this country many years ago, and it merits a place "in every

one." It forms a spreading, branching, somewhat bushy plant, if properly tied up; or if left loose, will hang over the side of the pot. The foliage is finely trifoliate and very neat. The flowers are borne in abundance, each blossom being an inch across, white, margined with rich red, and the lower part of the tube yellow. It grows freely, may be procured cheap, and ought to be grown wherever practicable.

ONCIDIUM CUCULLATUM.—A beautiful stove orchid, producing its flowers in racemes ten or a dozen in each. The sepals and petals are green, blotched and barred with brown. The lip is very large, of a rosy-lilac, very distinctly and numerously spotted with dark maroon, and a dash of yellow at the claw. Each blossom is about two inches across. It merits a place in every collection. — (Figured in Van Houtte's *Flore*.)

HOYA VARIEGATA.—This very handsome species was first brought into notice in 1846, but we have not heard of its blooming in Europe prior to 1852, when it flowered in the gardens of Prince Frederic of Pays-Bas, in Germany. We have had it some time, and have seen strong plants in several other places in England, but not seen one yet in bloom. Probably some difference in its constitutional character requires a peculiar mode of treatment, varying from what the other kinds have, in order to cause it to blossom. The general form and habit of the plant is much like our old favourite, *Hoya carnosæ*. The leaves, when young, are green, with a broad, irregular-shaped margin of a cream colour, edged with rosy-red. When they are fully grown, the rosy-red and cream colour change to a silvery white. The flowers are produced in similar shaped pendulous heads to *H. carnosæ*, but the individual blossoms are about one-third less. Each head contains from thirty to forty flowers, *rose coloured*, and the corona is white, with five rosy-purple stripes and a yellow centre. They are very beautiful, and with the pretty variegated foliage render the plant very ornamental, and well entitled to a place in every collection of stove or greenhouse plants. — (Figured in Van Houtte's *Flore*.)

RHODODENDRON DUC DE BRABANT.—This very beautiful flowered variety is an hybrid between *R. catawbiense* and *R. maximum*, raised in Belgium, and obtained a principal prize at the great Floral Exhibition held in June, 1853. The heads of flowers are very large, and each blossom is about four inches across the face. They are white, edged with rosy-lilac, and about half of each of the upper segments is orange, beautifully spotted with rosy-red. It is a charming variety, well worth possessing. — (Figured in Van Houtte's *Flore*.)

Plants now in bloom at Kew and other places.

CYANANTHUS LOBATUS.—It is rarely seen well bloomed in the greenhouse, but if planted out in the open ground during summer, as other tender bedding plants are, it grows very freely and blooms in profusion. The flowers rise about four inches high, in shape like a small-sized perriwinkle, blue. It spreads well about the border, and has an interesting appearance.

SCUTULARIA ALPINA.—A hardy perennial, very beautiful. The plant grows a foot high, having numerous branches, and spreads freely around. Its profuse number of spikes of flowers render it very orna-

mental. The tube-shaped blossoms are blue with a white lip, contrasting prettily.

NEPETA MACRANTHA.—A hardy perennial, its numerous flowering spikes growing from two to three feet high, bearing a vast profusion of tube-shaped, pale blue flowers; each blossom an inch and a half long.

DIANTHUS TRIFUSCULATA.—A hardy species, growing erect, two feet high. The flowers are produced in terminal heads, each blossom an inch across, of a bright pink colour. It is a profuse bloomer, and merits a place in every flower-garden.

ACHILLEA AGERATUM.—A hardy perennial, the flower stems rising two feet high. The flowers are produced in very large, terminal heads, of a rich yellow. It is a profuse bloomer, neat growth, very showy, and entitled to a place in every flower-garden.

EVERGREEN PHYSICAL HERBS, ORNAMENTAL TO THE FLOWER-GARDEN OR SHRUBBERY.

BY MR. PETER MACKENZIE, OF WEST PLEAN, NORTH BRITAIN.

IN small gardens there might be formed a very useful and ornamental collection of evergreens, that would not occupy much space, and many of them would be of use in a family nearly all the year round. They are not expensive to purchase, nor difficult to keep after they are planted; for they commonly thrive best in soil that is light and dry, and they will not complain, although they be somewhat stinted in their food; for when they are over fed, they generally lose much of their virtue and hardiness.* We shall now notice some of them, and begin with *SAGE*. Its name is derived from *Salvo*, "to save." There are many varieties of *SALVIA OFFICINALIS* that are easily cultivated, and are much esteemed by many; the *narrow-leaved* is sometimes called *Pea-sage*. We once lived at a place where a late Prime Minister used frequently to take up his abode, and had some share in taxing the teas that came from China; yet he preferred the Tea-sage, for a quantity had to be gathered every morning from the garden, and tea be prepared for his breakfast. *Sage* has a strong fragrant perfume, and a warm, bitterish, aromatic taste. It was in ancient times considered as a remedy of general efficacy in all diseases; hence the old adage,— "Why should a man die while he has *Sage* in his garden?" When the *Sage* is grown in a mass, its numerous spikes of blue flowers are very ornamental. We are also informed that the Chinese, who are said to have experienced the good effects of *Sage*, value it highly, and in some cases prefer it to their own tea.

* The evergreens we refer to are often denominated *physical herbs* or *sweet herbs*, and instead of being collected into one bed or clump, are often scattered over the garden, and left to grow in rather a neglected state, whereas if a little attention was bestowed upon them, they might be made to contribute to the beauty and usefulness of the flower-garden or shrubbery.

THE ROSEMARY.—Its name is derived from *ros*, "dew," and *marinus*, "of the sea;" and signifies Sea-dew. It flourishes best where it has a sea-air. It may be also introduced for its fragrant aromatic smell, and it is easily propagated by planting cuttings in the spring. There are several varieties of it, such as the Broad-leaved, Silver-leaved, Gold-leaved, &c. Sprigs of Rosemary were, at a former period, given to those who attended funerals, for the purpose of throwing them into the grave. GAY refers to the custom in his "Shepherd's Week," when one says :

"What flower is that which royal honour craves,
Adjoin the virgin, and 'tis strewn on graves."
"To show their love, the neighbours far and near
Follow'd, with wistful look, the damsel's bier.
Sprigg'd rosemary the lads and lasses bore,
While dimly the parson walk'd before.
Upon her grave the rosemary they threw,
The daisy, butter-flower, and endive blue."

It was also planted near tombs, like Mallow and the Asphodel. Mr. T. Moore alludes to its character as a mourner, in the following passage :

"The humble rosemary,
Whose sweets so thanklessly are shed,
To scent the desert and the dead."

In many parts of England it is still customary, among the peasantry, to place it in the coffins of the dead. To this practice H. Kirke White refers, in one of his early effusions :

"Sweet-scented flower, who art wont to bloom
On January's frost severe,
And o'er the wintry desert drear
To waft the waste perfume ;
Come press my lips, and lie with me,
Beneath the lowly elder tree,
And we will sleep a pleasant sleep ;
And not a care shall dare intrude,
To break the marble solitude,
So peaceful and so deep."

Shakspeare and others of our old poets repeatedly speak of Rosemary as an emblem of remembrance ; and as having been worn at weddings, to signify the fidelity of the lovers. Thus Ophelia says :

"There's rosemary for you, that's for remembrance ;
Pray you, love remember."

The following passage occurs in Drayton's "Pastorals :

"He from his lass him lavender bath sent,
Showing her love, and doth requital crave ;
Him rosemary his sweetheart, whose intent
Is that he her should in remembrance have."

The Rosemary was a favourite with Spenser, which he generally included where he mentions a variety of flowers or herbs. He men-

tions it as affording food to his butterfly, little Clarion, "Cold lettuce and refreshing rosemarine;" and as decking the tomb of the great :

" And round about he taught sweet flowers to grow :
The rose, engrained in pure scarlet dye ;
The lily fresh, and violet below ;
The marigold, and cheerful rosemary."

It has been held in high esteem as a "comforter of the brain," and a strengthener of the memory ; and on the latter account is an emblem of fidelity in lovers. Formerly this plant never failed to form part of the bridal wreath, whether of a cottage maiden or of a queen. Sprigs of Rosemary mingled in the coronal which bound the tresses of Anne of Cleves, when she became the bride of King Henry VIII.

The plants are easily formed to suit a bed, and have them as dwarf as desired ; by stopping the leading shoots, they may be kept well clothed at from half a yard and upwards. Cut back a half or two-thirds of each last year's shoots, about the middle of March ; and when the new side-shoots push, if too vigorous, pinch off the end of such during summer. A bush of Rosemary in a shrubbery, duly formed and supported, is very neat, and especially handsome when in full bloom ; its long spikes of light blue flowers have a cheerful appearance. Dwarf plants in a bed, in warm situations, bloom profusely. It blooms admirably, too, in winter, when trained against a south aspected wall.

SWEET LAVENDER may also be added to the collection. It is a hardy plant, and has been grown in this country for nearly 300 years. The fragrant smell of the flower is well known, and to most persons very agreeable. To the taste it is bitterish, warm, and somewhat pungent. The leaves are weaker and less graceful. The flowers are often employed as a perfume ; and medicinally, as mild stimulants in several complaints, both internally and externally. They are also sometimes used in the form of a conserve :

" Sweet lavender, I love thy flower
Of meek and modest blue,
Which meets the morn and evening hour,
The storm, the sunshine, and the shower,
And changeth not its hue.
But thou, an emblem of the friend
Who, whatso'er our lot,
The balm of faithful love will lend,
And true and constant to the end,
May die, but alters not."

And as a border for the bed, it will not do to lack the various species and varieties of THYME. Even the *Wild Thyme* may be introduced, and the hairy, the woolly, and the common garden ; also the lemon-scented, gold and silver-edged, and others that might be named. We are informed that the culinary use of Thyme is principally for broths and ragouts. It is also a common ingredient in stuffing to savour meats, and make them more relishing. The Lemon Thyme is less pungent than the common garden Thyme, but much more grateful ; hence it is used as a seasoning for veal and other meats where lemon-

peel would be used ; thus answering the purpose of two distinct spices. Thyme is also an excellent plant for the honey-bee, and many will be ready to say,

“ Come honey-bee, with thy busy hum,
To the fragrant tufts of the wild thyme, come.”

Besides its agreeable aromatic smell and warm pungent taste, its medicinal qualities are said to be *tonic* and *stomachic*. It was formerly extolled as a nervous-simple, and was much used in an infusion for reviving the spirits and relieving headache.

By growing such plants in a proper way, and knowing how to use them, such evergreens may become more valued and better known, not only to those who are supreme in the kitchen, but to those who love

“ Blossoms that lowly bend,
Shutting their leaves from evening's chilly dew,
While their rich odours heavily ascend,
The sitting winds to woo.”

(To be continued)

REMARKS ON BRITISH ORCHIDS, ETC.

BY MR. PETER MACKENZIE, WEST FLEAN, NORTH BRITAIN.

A labouring man, who was very fond of flowers, and had a pretty long flower-bed in his garden, found in the moors, in boggy ground, some very fine species of Orchis. He stood and admired them for a time in silence, and then said to the flowers, “ Ye are too beautiful to live in a bog ; I will take you home to my garden, and give you a place in my flower-plot, and many will see and admire you ; but how will I manage to save you ? ” He did not pull them in haste, but took out his pocket-knife and cut away the grass that was growing about the flowers he had fixed on, and then cut into the earth and lifted the plants in full flower, with a portion of the soil in which the root grew. They were planted among other flowers and grew well ; and although they opened their beauties in a bog, they closed their flowering season in a garden, and the translation did not appear to injure them at all.

The cottager may have his *Orchids* as well as others who have better means for cultivating this singular order of plants. The man of wealth may have his beautiful epiphytes, the cottager the herbaceous species, and the various species of the native Orchis, such as the Meadow Orchis, the Early Spotted Orchis, the Marsh Orchis, and the Orchis *maculata*, arranged with the fragrant *Gymnadenia*, the green *Habenaria*, the *Listera ovata*, or common Twayblade, the *Epipactis latifolia*, or broad-leaved Helleborine, and others of a similar nature ; these would form a very interesting collection of native plants, with little trouble to grow them, and a small space of ground would hold them.

Salop, we are informed, is prepared from the root of the *Orchis mascula*. It consists principally of a modification of gum, much resembling *tragacanth*, with a small quantity of starch. It is, too, sometimes used as an article of food.

Many useful and ornamental plants may be grown in a poor man's

garden, from which he may derive both profit and pleasure, so that we may say or sing,

The cottage garden, most for use design'd,
Is not of beauty destitute. The vine
Mantles the little casement, and the briar
Drops fragrant dew among the July flowers;
And pansies, rayed and freck'd with mottled pinks,
Grow among balm, and rosemary, and rue.
There honeysuckles flaunt, and roses blow
Almost uncultured; some, with dark green leaves,
Contrast their flowers of pure, unsullied white;
Others, like velvet robes of regal state,
Of richest crimson; while the thorny moss,
Enshrined and cradled, the most lovely wear
The hues of youthful beauty's glowing cheek.

GAS-LIME VALUABLE IN THE CONSTRUCTION OF WALKS.

BY THOMAS RUTGER, ESQ.

I can corroborate the statement of your correspondent, G. B. M., which appears at page 205 of the present volume of the *Cabinet*, in reference to the value of gas-lime for preventing weeds from growing on gravel walks. A gardener, who is under my superintendence, had heard something about it, and was determined to try it, first on a small scale. His caution arose out of his doubts as to how it might act in wet weather, and also after frost. Having *proved* that he had nothing to fear from either, he proceeded by slightly breaking up the surface-gravel, and mixing in with it the gas-lime in a sufficient quantity as he thought would answer the purpose, and then to level and rake the walk neatly, and pass the roller over it, which was repeated a few times after a shower.

If any of your correspondents will turn to page 184 of the present volume of the *Cabinet*, the broad walk which appeared in the design there given had the gas-lime mixed with the gravel a year ago, since which there has been no appearance of weeds. Encouraged by the above result, all the remaining walks which appear in the design above alluded to, are now just finished off in the same way. The mode the gardener has adopted in the present case is, to break up the surface-gravel about two or three inches deep, and to remove the rougher parts of it, which gives room for the gas-lime, and which is mixed with the fine gravel in the proportion of one-third at least of gas-lime to two-thirds of gravel.

Wherever gas-lime can be had conveniently, I am fully persuaded that it will answer the purpose of preventing the growth of weeds; and as to the firmness and appearance of the walks above, "I may say renovated,"—they are all that can be desired. However, it must be understood, that in the present case the material for the walks consists principally of granite chippings, "and for surfacing" the chippings are screened; so that when the walks are neatly finished off a stone, scarcely as large as a pea, can be seen, while the surface is nearly equal in smoothness to a lime-ash floor.

Whether or not a similar process with other kinds of ground will answer, so as to meet all kinds of weather without being injured, I will not venture to assert; but as to the destruction and prevention of weeds, I have no hesitation in giving my opinion as to its being effectual.

There is a kind of gravel, if it may properly be so called, named *shingle*, which has no adhesive qualities, but which is occasionally used for walks, where nothing better can be had. I shall be glad to hear the result of its being mixed with the gas-lime as a trial, to see, when incorporated, if they will bind, so as to make a compact surface.

THE STUDY OF NATIVE PLANTS.

BY MR. PETER MACKENZIE, WEST PLEAN, NORTH BRITAIN.

THE study of native plants has been often a source of delight to many inhabitants of this world; and a pity it is that such enjoyments should be confined to so few of the human family. A writer asks the question, "Whither will the pursuit of wild flowers lead us?" It is there answered, "Truly beyond the smoke and din of large capitals, and even the hum of distant villages." Wild flowers seem to love solitude and shade, and oftentimes tempt us into obscure and almost inaccessible spots. Nevertheless they spring up everywhere. They may be seen enamelling the green sward which surrounds the aristocratic mansion, but they shine not less sweetly under the little hedge-row which bounds the garden of the lowly husbandman. Let us love and cherish them, not only for the sake of their own sweet fragrance and simple beauty, but because they are suggestive of thoughts and feelings which lead us onwards and upwards, and wind associations round our hearts which, from the cradle to the grave, endear us to one another and to Nature herself, and impress upon us the solemn conviction that "all that we behold is full of blessings."

COMPOST BEST SUITED TO SUCCULENTS.

BY AN EXTENSIVE CULTIVATOR, NEAR LONDON.

By this title may be undertood an immense tribe of plants formerly considered tenants of the dry-stove, but now found to be more hardy than the Geranium. But it is proposed to restrict this inquiry to the *Cactæe*, as sufficiently comprehensive for the present purpose.

There are many persons now living who may remember the time when our greenhouses or stoves could exhibit few specimens of the *Cactæe*, except the common creeping *Cereus*, the Melon and Torch Thistles, and the Indian Fig.

Now, however, the case is widely different; for such has been the success of collectors, and so great is the facility with which the genera are propagated, and varied by cross impregnation, that it would be vain

to attempt a catalogue. I have a descriptive list of one hundred and forty-seven species and varieties.

Having then so much choice among a selection of surpassing beauty, it becomes an object of consequence to determine, pretty accurately, the soil that will generally succeed with all the varieties: but herein, as almost always happens, cultivators are at variance; yet, as we do not pretend to dictate, and ever desire to "let well alone," we shall be content to allude to what we have seen and heard.

Formerly it was the custom to make pretty free use of old mortar scraped from bricks or walls, incorporated with loam; then it was roundly asserted that good, soft, or *sandy loam*, mixed up with fragments of broken bricks, formed the most healthy bed for the roots. Other writers, and practical gardeners, got rid altogether of lime rubbish, and retained but little loam; they advised, and many now use, the best or richest "peat," as heat-mould is called, with rotten manure, and give water freely, in the growing season, with liquid manure.

Be the soil what it may, certain it is, that it should be pressed firmly around the roots with the hands, till the ball be solid and compact; and little or no water ought to be given between October and April, during which period frost of two or three degrees will little affect the plants; good drainage is also premised.

But I am sure that the herbage of Cacti (if so it may be called) is greatly affected by the soil. In some collections one observes the tint of almost every plant to be a dull, brownish-green, and the texture flaccid; in others, it is of a full deep verdure, with every appearance of vigorous health. Conversing on this subject with another very successful grower, one who had pre-eminently beautiful specimens of *Epiphyllum truncatum* grafted upon *Pereskia aculeata*, I was told that "loam spoiled all the Cacti, and turned the plants brown." My own experience for years tended to confirm this observation, but time has not been given to confirm the truth of another remark, which I must communicate that cultivators may experimentize for themselves. My friend said, "take equal quantities of very old black manure, and of the strongest lime rubbish from old walls, the older the better; mix them thoroughly, and add about one-sixth of unctuous loam. In this compost your plants will recover colour, be always green, and bloom abundantly." At all events his plants make good his words; and I shall attain my present object if this paper excite the notice of observant and candid horticulturists.

MANAGEMENT OF MIMOSAS AND GREENHOUSE ACACIAS.

BY A PRACTITIONER AT KEW.

THE volumes of the *Floricultural Cabinet* contain numerous valuable articles on the treatment of various flowering plants, but it appears to me that those individuals who have favoured us with the excellent remarks on each kind, have generally directed their attention to such plants as required a lengthy article upon them. For such I am sure

the readers of the *Cabinet* are much indebted ; but there are many, very many, beautiful flowering plants which have not been noticed. They highly merit it ; and though no lengthy remarks are necessary, I think it would be equally acceptable if a few short observations upon them, as to the particulars of the plant, its culture, so as to keep it healthy, and bloom profusely, &c., were given. I believe many of the readers of the *Cabinet* have hesitated to communicate useful information, merely because the observations they had to make upon a plant, or plants, being few, they would not, therefore, be interesting or useful ; but I am sure the more simple the means, the more condensed the remarks, the more acceptable to us. I hope, therefore, those readers who have practical knowledge of any beautiful flowering plant, hardy or tender, will favour us with information. To commence with, I herewith send a few remarks upon two genera of plants of which no notice has been taken in the *Cabinet* ; they are the greenhouse Mimosas and Acacias. I have included the two, because many of the kinds formerly Acacias have been transferred to the Mimosas, and others of the Mimosas to the Acacias ; and considerable confusion prevails through the country as to their identity. But whether they are now designated *Acacia*, *Mimosa*, or *Inga*, &c., there is a natural identity in the class of plants, and I refer to them as a whole. The plants are profuse bloomers, *very showy*, most of the kinds produce yellow flowers, some white and others pink : many of them are very fragrant, as the well-known *Mimosa paradoxa* (or *Acacia armata*). They generally produce their lovely blossoms during the early spring months, hailing the return of that delightful season with presenting an array of beauty, and affording a delightful gale of perfume. The greater portion of this ornamental tribe of plants are from New Holland. They are generally very free growers, and of easy culture. I find them to grow vigorously in equal parts of good rich loam and peat, having a quantity of silver-sand and bits of charcoal mixed therewith. I use a good portion of drainage in the pots, and give the plants plenty of pot-room. This latter attention is necessary as the plants root so very rapidly. In a soil as above described, and giving a good drainage, a very free supply of water is required : I always take care to let the soil be dry before I give a fresh supply of water. I shift the plants into larger pots immediately they have done blooming ; they then push freely those young shoots which are the blooming ones *for next season*.

I would add a list of kinds here, but I think it unnecessary to do so, as each kind is graceful in form and beautiful in flower, and merit a place in every greenhouse or conservatory ; and most of the handsomest have been described by the Editor in the very useful Monthly lists of New or Rare Plants, given in each Number of this Magazine.

All the kinds strike root freely from cuttings of the *young shoots*, when about half hardened. I strike them in sandy loam, the *greater portion* being sand, and place them where they get a little bottom heat. Those kinds which I find do not root readily from cuttings, I have struck from portions of the roots, inserting them, &c., as done to shoots, leaving out the top part of each about an inch, and I have never failed to raise plants of any of the sorts by this method. I always cut the

lower portion of the root in a transverse direction close under an eye. If this plan of striking was adopted with most kinds of greenhouse plants, it would be found to succeed better than by taking shoots: the roots not being liable to damp off as the shoots often do.

I shall continue to send a few remarks upon plants for each successive Number of the *Cabinet*, if it meet the approval of the conductor.—[We shall be obliged by them.—ED.]

VERBENAS, THEIR CULTURE, WITH A LIST OF THE BEST IN CULTIVATION.

BY MR. JOHN BURLEY, OF WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON.

MY article on Verbenas last year I hope was the means of assisting many of the readers of the *Cabinet* in making a selection of the best then in cultivation; and it is with pleasure I now give a list of the best of this season's novelties, as well as a hint on their culture in pots, and in the open ground.

This present season's varieties contain some very striking novelties, and in this charming class of plants we have an addition in colours as well as improvements on colours already well known. The habit too of some of the varieties are very compact and free flowering, rendering them excellent for pot culture, as well as for bedding out. In the improvements I have mentioned the varieties that claim the superiority are those that have been raised by nurseymen and growers on the Continent; in fact, for some few years past they have "borne the palm" for producing the greatest novelties in colour and habit. Our growers at home certainly produce flowers of fine form, both as regards the corolla and truss, while the habits of the same has nearly condemned many of them as worthless for *bedding* purposes. In my present list, given below, I shall mention those only that are decided novelties and improvements on all varieties already out. Those marked thus (*) are excellent varieties for pot culture. The best way of growing them to make fine showy specimens is as follows:

In January place the old plants in the propagating-house, which should be kept at a temperature from 55° to 70°, but never under 50°. When they have made their young wood, or *cuttings*, they should then be taken off and put in a striking-pan or pot, filled to about one inch from the surface with rough draining material, placing on the top of that half an inch of leaf-mould, half rotted, finishing with silver sand to the surface of the pot. Before putting in the cuttings, a slight watering of the sand with a fine rose-pot will be necessary to settle the whole; then prepare the cuttings in the usual manner and push them in the wet sand. They should be then placed in the warmest corner of the house, or if they could be plunged in a little bottom heat the better, and the sooner they will root off. As soon as the cuttings are well rooted they should be potted into 60-sized pots, and placed in gentle heat for a few days until they are established; then stop the lead, and place them in a cooler place to break afresh, and as they advance in

their growth gradually harden them off, for if left in heat they break with very weak shoots. As soon as the plants advance in their growth and the pots get full of roots, they should be shifted into 48-sized pots, and again, as they grow, into 32, 24, &c. During the growth of the plants all shoots must be stopped, in order to encourage them to grow bushy; and never allow them to bloom until they have properly formed themselves,—and have as many leading shoots as are wanted; but, as I before remarked, those recommended for growing in pots, of the Continental varieties, will scarcely require any stopping after they are shifted out of 60-sized pots.

The soil I recommended for their first potting from the cutting-pots is, an equal portion of leaf-mould, silver sand, and mellow loam, altering it as the plants require larger pots, to equal parts of turfy loam, leaf mould, and peat, with sand added to keep it free. In the different stages of potting use pots thoroughly clean and well drained, with a little of the rough soil over the drainage to keep it free from being choked, which constant watering would be apt to cause it to do.

Let the plants be watered when growing with *weak* liquid manure, twice or thrice a week, to help them on. They will also be benefited with frequent syringing over the foliage to keep them clean, as well as to promote the health and growth. When in flower, and as the flowers fade off, the old truss should be cut off, as they only weaken the plants by being left on, and likewise give the plants an untidy appearance. By attending to this the plants will break afresh, and continue blooming all the season.

Very little need be said about their management when required for bedding; suffice to say, their management is the same in striking, potting into 60-sized pots, which will be quite large enough for them until the time arrives for planting out. Attention in shortening the shoots to make them bushy will be necessary. If the green fly attack them, they may be easily subdued by smoking them with tobacco. If the mildew should touch them, it may be eradicated by dusting the parts affected with sulphur.

Annexed is a list of twenty-four of the best kinds now in cultivation, both in colour and habit.

* *Azurine*, beautiful lavender-blue, compact habit, good truss, quite a distinct colour.

* *Ariadne*, purplish rose, with a beautiful white eye, good habit, distinct colour.

Bouquet parfait, beautiful deep-rose, with a rich crimson centre, free bloomer, extra good truss and habit.

* *Emma Bournaux*, mottled lavender, with a crimson eye, novel colour, good habit.

* *Gangymede*, rich crimson, with a light eye, a good truss, and excellent habit.

General St. Arnold, rich crimson-scarlet, with a distinct white eye, fine-formed flower, but a rather small truss and indifferent habit, *distinct colour*.

Marie Louise, beautiful deep salmon, with a light eye, good formed truss, and good habit.

* *Madame Ivery*, rich damson-plum, with a light eye, good truss and habit, quite a new colour.

* *Madame Thorel*, a splendid form flower, colour a crimson, violet, shaded, with a fine light eye, very compact grower, *quite a novelty in Verbena*.

* *Madame A. Pommery*, fine rosy-pink, with a crimson centre, habit and truss first rate.

* *Madame de la Valliere*, French white, with a distinct dark centre, good truss, and extra-good habit.

* *Madame de Stael*, bright cerise, with a yellow eye, fine truss, and very free bloomer, quite a novelty.

* *Madame Doumet*, damson purple, with a light eye, moderate truss and habit.

Manteau de Fiance, white, with a deep violet centre, good habit and truss.

Madame Gonnet, light rosy-pink, with a deep rose centre, good habit, and a large well-formed truss.

Madame Rougier, delicate blush, with light rose centre, and cream-coloured eye, fine formed truss, habit good.

Madame Modeste, crimson-carmine, fine, large, well-formed truss, good habit and free bloomer.

Mr. Rewier, fine orange scarlet, free bloomer and fine truss, quite a new colour for bedding.

* *Ondine*, delicate cream, tinged with rose, a first-rate habit and truss.

* *Pompey*, good clear blue, fine for bedding, the best useful blue out.

* *Rendalterii*, intense velvety-crimson, shaded with a still deeper colour around the eye, free bloomer and good truss.

* *Souvenir d'Evry*, violet, with a fine large white eye, good bloomer, and free habit, a first-rate flower.

* *Vicomtesse de Bellival*, violet-purple, with a large clear white eye, good-formed flower and habit, quite a novelty in Verbena.

Vicomte de Barry, beautiful salmon-rose, with a crimson eye, large well-formed truss, and good habit.

Vulcan, beautiful plum and crimson shaded, having the appearance of a *shot-coloured silk*, *free bloomer*.

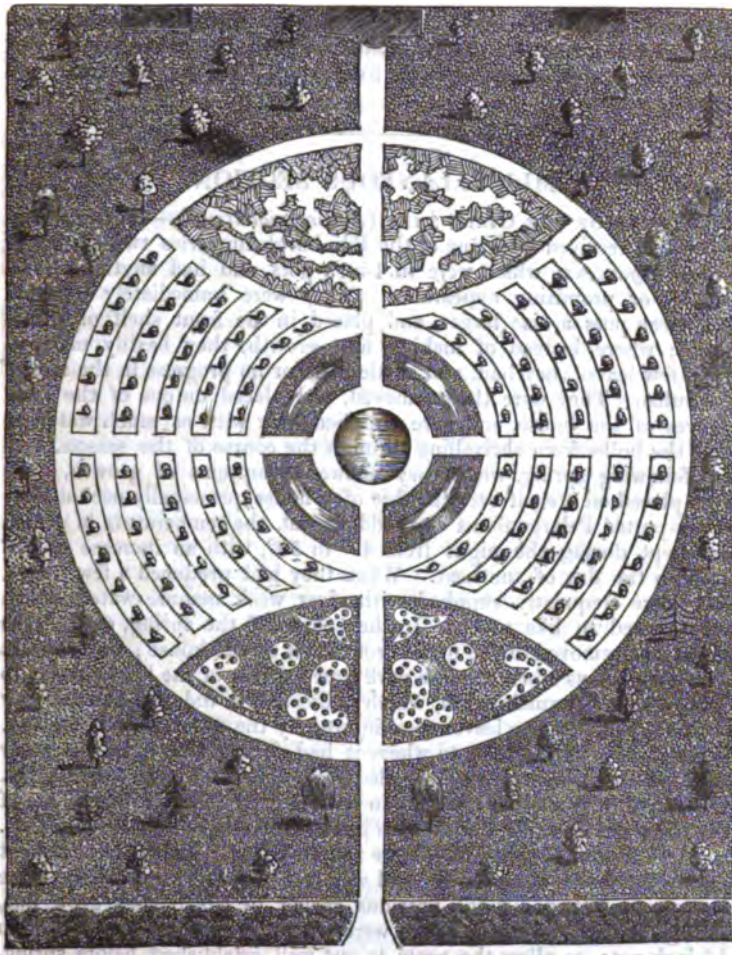
The above varieties may be purchased at a trifling cost, and now is the best time to do so. Young plants purchased at this season will come in for cuttings in the spring, and by stopping them now, shifting into a little larger pot, placing them in a cool frame, they will form nice plants, well adapted for working cuttings from at the time above stated.

PLANS OF FLOWER-GARDENS.—By T. RUTGER, Esq.

No. 11.

THE design in connection with this article is intended to represent a small botanical arrangement.

By approaching it through a thick shrubbery you enter a lawn, and passing on through a small flower-garden, the beds in which are on



10 10 ft.

grass, a round basin is approached, and in each of the four divisions surrounding it is an aquarium; proceeding onwards, a mass of rock-work for rock plants is entered, and at the extremity of the ground stands a summer-house, on each side of which a small propagating-house is shown. The circular compartments may be either appropriated for an arrangement of choice herbaceous plants, or a part of them for a rosarium or dahlia-ground, or for a collection of choice hollyhocks, or in any other way as taste or fancy may dictate. The lawn surrounding the circle may be dotted by a selection of the most choice trees, so as to be considered as an arboretum on a small scale;

and should there be room for a shrubbery to surround the whole, a gravel walk might be carried round. Sites for garden-seats, and various structures, might also be fixed upon, both for ornament and convenience.

MISCELLANEOUS SECTION.

CULTURE OF THE GIANT LILY (*Lilium giganteum*).—In the spring of 1850, I received from one of the Edinburgh nurseries two plants of *Lilium giganteum*, which were in 4-inch pots, and had anything but a healthy or promising appearance. They were immediately repotted into clean pots a size larger, and placed in the front shelf of a cool house; where, instead of making new growth, they hastily matured what few leaves they had, and made little or no progress in the size of the bulbs. They were then removed, and placed on one of the back shelves of the house, and were supplied only with as much water as kept the bulbs from shrivelling through the course of the season. In the following spring, when they showed symptoms of growth, they were placed on a shelf over the flue of a house principally occupied by newly-potted Pelargoniums for bedding out, the temperature of which was kept during the night from 45° to 50°, with an increase of 10° through the day of sun heat. When they had produced a few leaves, they were frequently supplied with clear weak manure-water, which they seemed to like much. In the course of the spring, one of the plants was removed to the upper front shelf of the house; but was not there many days when the fine dark green colour of the leaves began to change to a brownish-green, which indicated it did not like its new position, and that the leaves were injured by the direct rays of the sun. It was then removed back to where it had formerly been, on the lower shelf, where it was partially shaded from the sun by the upper shelf. Here they were allowed carefully to mature their foliage: this is one of the chief points to be attended to in the cultivation of bulbous plants. In the following autumn they were repotted into 7-inch pots, and kept during the winter between dry and wet, and in spring received the same treatment as they did the previous spring, by which they grew fine, strong, healthy plants. They were again in autumn repotted into 12-inch pots, to allow the roots to get well established before spring, and kept in the same state as they were before, during the winter season. This year they commenced to grow vigorously about the middle of March, when one of the plants soon afterwards showed its flower-stalk (the smallest of the two plants); and as soon as they were in active growth, they were supplied three times a week with manure-water much stronger than before, as they were now much more vigorous, some of the leaves measuring 11 and 12 inches across. By the early part of June, the flower-stalk had reached 6½ feet high, and then produced a number of its beautiful large white flowers, which filled the house with their sweet fragrance; and it now looks as if it would produce a good crop of seed. The soil used was equal parts of leaf-mould, cow-dung, and turfy soil, all well pulverized, and in a very decayed

state, with as much fine river-sand as made it light and porous. Should this fine Lily prove to be hardy—which I think, from its being so easily excited, there cannot be much doubt of—it will enhance its value very much, as it will be very ornamental in the case of those requiring an early display of flowers. A shaded place will be found the most suitable situation to grow it in, as its leaves are impatient of being fully exposed to the sun.—*R. Macdonald, in "Scottish Florist."*

RAISING SEEDLING CALCEOLARIAS.—The cultivation of the Calceolaria from seed requires a little extra care in the early stage of its culture; to ensure success in the raising of seedlings, it is requisite to attend to the following directions as nearly as possible:—The seed should be sown in pots, prepared in the following manner; the pot to be half-filled with drainage; over that rough siftings of the mould, and the surface covered with soil as fine as possible; half of this should be composed of silver-sand: when prepared thus it should be watered with a fine rose, immediately after which sow the seed carefully without any covering of soil; the pots should then be placed in a close frame or a hand-glass in a shady part of the garden (no artificial heat is required); in large establishments, of course, they may have propagating or other houses that will do, where the same kind of moist temperature would be obtained; any sun-light must be carefully guarded against by mats or paper; if the situation is of the proper temperature it will require watering very seldom: directly the seedlings are strong enough, they must be pricked off in pots prepared as before, and placed in the same situation: from the store-pots they will require to be potted off singly; after this the plants will grow very rapidly. Through the winter the plants will thrive well on the shelves near the glass in the greenhouses; to obtain fine specimens, they must be shifted on freely till the flower-stalks have started, and always to be smoked with tobacco directly the green-fly appears.—*Recommended by Messrs. E. Henderson and Son, of Wellington Nursery.*

[These remarks will apply also for the cultivation of the Cineraria, except that the plant is more hardy and will thrive with less care.]

TO PROPAGATE TALL-FLOWERING LOBELIAS.—The best time to put in cuttings is in autumn. This should be done as early as possible, to give time to have them well rooted before winter. There are generally plenty of shoots to be had from the bottom of the stem; but if the kind is scarce, the flower-stem may be cut into pieces; every joint will grow, if there is a leaf attached to it. The cuttings should be allowed to lie for a short time, to dry up the milky juice; in this way they will not be so apt to damp. The pot should be well drained, and filled to about an inch of the surface with light rich compost. Fill up the remainder with sharp sand, press it level, and give a gentle watering. Plant the cuttings round the edge of the pots, give a slight watering to settle the soil, and let them stand a short time to dry; then plunge the pots in a gentle bottom heat, when the cuttings will soon take root.—*W. G., "Scottish Florist."*



HOLLYHOCKS.—Now make new plantations of these noble flowers. Auriculas and Polyanthuses, Carnations, Pinks, &c., should be placed in their winter quarters, in a dry, sunny, sheltered spot, where a free circulation of air can be admitted on all proper occasions. Any plants out in the open beds, as Lobelias, &c., should be taken up and potted, for winter preservation, in pits, frames, &c. Chrysanthemums grown in the open ground, and required for blooming in-doors, should be taken up as entire as possible, and be potted with due care. All tender kinds of plants, as Scarlet Geraniums, Verbenas, in fact every kind requiring winter protection, should be housed *immediately*; it is bad policy to put it off a single day longer. All plants like light; place them as near to the glass as convenience will allow. Prepare the Tulip-bed.

DAHLIAS—Let the *crown* of the roots be covered with a few inches deep of soil around the stems. Beds of Pansies be made. Shrubs of all kinds may be planted. Roses now planted soon push new roots, and become well-established before winter; the soil being somewhat warm, excites the roots immediately. Pinks, also, may be planted in beds.

SHRUBS, &c., FORCING FOR WINTER BLOOM.—Such as are to bloom early should be gradually prepared, potted immediately, if required, and by the middle of the month introduce such as are desired to bloom by Christmas, into the house or pit. The kinds which are well-deserving such attention are Roses, Honeysuckles, Jasmines, Poinsettias, Azaleas, Kalmias, Persian Lilacs, Andromedas, Tree Carnations, Pinks (of which Anne Boleyn is the best), Rhododendrons, Rhodoras, Deutzias, Ribes, Spirea Prunifolias, Mezereums, Gardenias, Cupheas, Heliotropes (the new blue is fine), Scarlet Pelargoniums, Cactuses, Eranthemums, Justicias, Salvias, Gesnerias, Corræas, Chinese Primroses, Aconites, Mignonette, Primroses, Cinerarias, Stocks, Persian Iris, Crocuses, Cyclamens, Sweet Violets, Hyacinths, Lilies of the Valley, &c. Seeds of many annuals should now be sown in the border, and others in pots; such will bloom early next spring. Brachycoma, Schizanthus Retusus and Hookerii, Rhodanthe and Salpiglossis, seeds now sown in pots, plants potted off when strong enough, will bloom vigorously next spring.

IN THE GREENHOUSE, &c.

If the stock is not housed, it ought to be done immediately. Care must be taken so that one plant may receive something like its proper treatment without interfering materially with the well-being of its neighbours; and the tender ones must be placed in the best part, for

protection from cold wind, &c., *Pimeleas*, *Leschenaultias*, *Aphelaxis*, *Boroneas*, *Gompholobiums*, and *Diosmas*, are injured by being placed where there is a *current* of wind. Let each plant have all the space possible, and the robust large-leaved kinds, and the very slender delicate sorts should be kept as separate as can be arranged, so as to allow a due circulation of air. Be careful that the pots, &c., be perfectly clean before arranged for their winter situation. Repot *Cinerarias*, &c. Let *Camellias* which are to bloom early be placed in a warmer situation, also any Chinese or Indian *Azaleas*, so that they may be gradually advancing. In watering the stock of plants, let it be done in the *early part* of the day, so that any excess may be dried up before evening, and damps be avoided, otherwise mouldiness will ensue. Thin away the flower-buds of *Chrysanthemums*; water occasionally with liquid manure. *Calceolarias*, pot off seedlings to bloom next season.

PELARGONIUMS.—The plants headed down some weeks back, have now pushed shoots an inch or two long; these should be thinned properly. The plants must be repotted, in order to have the roots well established before winter. Shake off the soil, and shorten some of the long roots, so that young fibres be promoted, which is essential to the vigour of next bloom. Have a free drainage in the pots. Compost, turfy-loam well chopped up, with an equal portion of sandy-peat and well-rotted leaf-mould, and half the quantity of well-rotted dung. Give air to the plants in the daytime, and be careful not to give over much water at the roots, for if saturated they will be injured. Young struck plants should have the tops pinched off, to cause the production of side-shoots, to render them bushy for next season. Repot some of the **SCARLET GERANIUMS** (so called) to bloom during the autumn and winter; they are charming ornaments. So with the *new Tree Carnations*, of which there now are many very beautiful distinct varieties, deserving a place in every greenhouse and sitting-room.

BRIEF REMARKS.

EXHIBITION OF PLANTS, &c., AT CHISWICK, &c., DURING 1853.—Our readers are aware that none but plants, &c., of first-rate excellence are brought forward for competition on these occasions, and that a selection of the very best being inserted here may enable those of our readers who are desirous of possessing such things to make their choice, we have taken lists of the best in the various classes.

EXHIBITION ON JUNE 11TH.—COLLECTIONS OF TWENTY STOVE OR GREENHOUSE PLANTS.—1st Prize. Mr. May, gardener to Mrs. Lawrence, of Ealing-park, for the following plants:

Aphelaxis purpurea grandiflora.
Adenandra fragrans.
Allumanda cathartica.
Azalea Minerva.
Coleonema rubra.
Clerodendron fallax.
Dipladenia crassinoda.
Dracophyllum gracile.
Erica Cavendishii.
Gompholobium polymorphum.

Gompholobium splendens.
Ixora coccinea.
Leschenaultia biloba major.
 ————— *formosa*.
Pimelea spectabilis.
 ————— *Hendersoni*.
 ————— *mirabilis*.
Polygala acuminata.
Rondeletia speciosa.
Vinca rosea.

All these were of extraordinary size in formation and growth, specimens of perfection, and in most profuse bloom. In fact, they stand unequalled.

2nd Prize. Mr. Green, gardener to Sir E. Antrobus :

<i>Aphelaxis macrantha.</i>	<i>Erica Cavendishii.</i>
————— <i>purpurea.</i>	<i>Hoya bella.</i>
<i>Allamanda nerifolia.</i>	<i>Ixora coccinea.</i>
<i>Acrophyllum venosum.</i>	————— <i>crocata.</i>
<i>Azalea variegata.</i>	<i>Leachenaultia Baxterii.</i>
————— <i>præstantissima.</i>	————— <i>formosa.</i>
————— <i>coronata.</i>	<i>Polygala cordifolia.</i>
<i>Dillwynia ericafolia.</i>	————— <i>Dalmatiana.</i>
<i>Dracophyllum gracile.</i>	————— <i>oppositifolia.</i>
<i>Erica Clowesiana.</i>	<i>Tetratheca verticillata.</i>

TWELVE PELARGONIUMS.—1st Prize, Mr. Turner. *Enchantress*, *Magnet*, *Mochanna*, *Narcissus*, *Virgin Queen*, *Magnificent*, *Rowena*, *Rosamond*, *Gannymede*, *Constance*, *Centurion*, and *Alonza*.

2nd, Mr. Dobson. *Star*, *Purpurea*, *Harriet*, *Incomparable*, *Governor*, *Loveliness*, *Chloe*, *Vanguard*, *Gertrude*, *Emily*, *Empress*, and *Commander*.

AMATEURS.—1st Prize, Mr. Holder. *Star*, *Lord Gough*, *Gulielma*, *Forget Me Not*, *Beauty of Montpellier*, *Village Maid*, *Constance*, *Narcissus*, *Alderman*, *Norah*, *Maid of Perth*, *Centurion*, and *Magnificent*.

2nd Prize, Mr. Carrigan; 3rd Prize, Mr. Robinson. Each had some of the varieties as the above collections, and the following additional kinds were shown in their collections; viz., *Ajax*, *Prince of Orange*, *Painter improved*, *Ganymede*, *Little Nell*, *Princess Royal*, *Conspicuum*, *Rowena*, *Pearl*, *Flying Dutchman*, and *Exactum*. There were also shown *Cynthia*, *Corinne*, *Optimum*, *Astræ*, *Beatrice*, *Dobsoni*.

Pelargoniums exhibited on July 9th:—Private growers, 1st Prize, Mr. Borham, gardener to Mrs. Maddeford, of Staines Villa. *Ajax*, *Pearl*, *Alonza*, *Constance*, *Mont Blanc*, *Magnificent*, *Star*, *Norah*, *Rowena*, *Centurion*, *Conspicuum*, and *Rosamond*.

2nd Prize, Mr. Robinson. *Ariadne*, *Old Story*, *Pulchrum*, *Ophelia*, *Novelty*, *Butterfly*, *Lord Mayor*, *Rosamond*, *Mochanna*, *Constance*, *Salamander*, and *Rowena*.

DEALERS.—Mr. Turner. *Optimum*, *Old Story*, *Exactum*, *Monteith*, *Ajax*, *Alonza*, *Plantagenet*, *Esther*, *Dobsoni*, *Rosa*, *Cristine*, and *Elise*.

2nd Prize, Mr. Dobson. *Ganymede*, *Ajax*, *Star*, *Magnificent*, *Commander*, *Rosa*, *Jupiter*, *Loveliness*, *Marginatum*, *Exhibitor*, *Mont Blanc*, and *Ambassador*.

FANCY PELARGONIUMS, June 11th.—Dealers, 1st, Mr. Turner. *Madame Rosatii*, *Anais*, *Delicatum*, *Caliban*, *Richard Cobden*, and *Erubescens*. 2nd, Mr. Ambrose, *Magnum Bonum*, *Figaro*, *Triumphant*, *Jenny Lind*, *Defiance*, *Reine de France*.

PRIVATE GROWERS.—1st, Mr. Smith. *Defiance*, *Alboni*, *Hero of Surrey*, *Jenny Lind*, *Empress*, and *Advancer*.

2nd, Mr. Miller. *Odetta*, *Richard Cobden*, *Modestum*, *Emma*, *Triumphant*, and *Erubescens*.

3rd, Mr. Robinson. *Fairy Queen*, *Gipsy Queen*, *Princess Galitzii*, *Advancer*, *Delicatum*, and *Statiascii*.

Exhibited July 9th.—Dealers, 1st, Mr. Turner. *Miranda*, *Delicatum*, *Electra*, *Madame Rosatii*, *Jenny Lind*, *Richard Cobden*.

2nd, Mr. Gaines. *Hero of Surrey*, *Vandyke*, *Lucy*, *Advancer*, *Celestial*, and *Multi-florum*.

3rd, Mr. Ambrose. *Defiance*, *Delicatum*, *Perfection*, *Madame Sontag*, *Erubescens*, and *Barbette*.

PRIVATE GROWERS.—1st, Mr. Robinson. *Fairy Queen*, *Richard Cobden*, *Celestial*, *Delicatum*, *Perfection*, and *Princess Galitzen*.

2nd, Mr. Miller. *Orestes*, *Formosissimum*, *Queen*, *Richard Cobden*, *Caliban*, and *Princess Galitzen*.

(To be continued in our next.)

LAPAGERIA ROSEA.—A plant, splendidly in bloom, was exhibited at the Horticultural Society's garden on July 11th. Mr. Selkirk, gardener to W. J. Myers, Esq., Porters, near Barnet, who brought it, states, "The plant was grown in the plant-stove, where for the last three years it has never failed to flower beautifully; and when fifteen or sixteen blossoms are in perfection at one time (as we have had it) the effect is very striking. Another, planted in the border of the plant-stove last year, has made a shoot twenty feet long, and is now in flower, trained up the rafter. We find it grow best in pure *leaf-mould*, with plenty of pieces of wood, in a state of decay, mixed with the mould, and the plant kept "well up" in the pot or border.

ON THE FORMATION OF GRAVEL WALKS.—As a country subscriber, I am, with many others of your subscribers, much obliged to G. B. N. for his remarks, in the last month's Number, on the formation of Gravel Walks, and his information relative to Gas-Limes. G. B. N. would further oblige your readers by giving us information as to what *Gas-Lime* exactly is? Is it the refuse of lime after used at gas-works?—or what? Likewise, as to the *thickness* of his coat of Gas-Lime; also of the gravel laid upon that coat?—*A Country Subscriber.*

PLAN FOR A BORDER OF FLOWERS.—In the establishment where I am gardener, there is a flower-border in front of a west-aspected wall (fruit-trees are trained against it) which is one hundred and nineteen yards long. Along the front of the border there is a gravel walk, six feet broad, which is separated from the border by a grass verge, one foot wide. The border at the north end is twelve feet broad, and at the south end five feet, regularly widening along from south to north. Near the middle of the wall there is a walk from the east to the walk in front of the border, which is six feet wide, a gate being placed in the wall. The length of the border from the side of this gate-entrance to the north end is sixty-two yards, and from the same to the south-end is fifty-five yards. At present it is an entire border, filled with greenhouse, hardy herbaceous, and annual plants. My worthy employer, however, requires me to make this border into small beds, each bed to contain only *one sort* of showy flowers. Now I shall be greatly obliged if some reader hereof would give me a sketch of the best form of beds for this space. The space between the beds may be grass or gravel. If the latter, what plants would be best for an edging to the beds? An early attention to the favour solicited will confer a great kindness on—*A Brother Gardener, in Gloucestershire.*

P.S. The sketch may be sent to the Editor, Larkfield-lodge, Richmond, London.

AMERICAN ALOE.—A beautiful specimen of this plant is now bursting into bloom in the Italian garden of the Earl of Mount Edgcumbe, at Plymouth. It is now nearly as high as the orange conservatory, but it is expected to reach about thirty feet when it is at its full growth. The plant is said to be about one hundred years old, and there are about thirty spikes of flowers coming into blossom.

REPAIRING GUTTA PERCHA TUBE.—Let the part where the hole is be heated by holding it before a fire, or in hot water. Take a piece of gutta percha, old piping, shoe sole, or a small bit of new, and let this piece be heated too, then patch up the hole with it. Solder it up, if you like to do so. *A Practitioner.*

TO DESTROY BLACK-BEETLES.—Take a lime-stone, pour a little water thereon, and after it becomes pulverised place the powdered lime within reach of them, and they will soon perish.

TREATMENT OF LESCHENAULTIAS.—I have grown the *L. formosa* and other species with unparalleled success by pursuing the following particulars:—*Compost.* Light peat soil, in a rough, *fibrous* condition, to which is added one-third of sharp silver-sand, and a good sprinkling of bits of charcoal, and a liberal drainage of crocks. *Potting.* The middle of the ball is as high as the rim of the pot, but it slopes from the stem to the side; so that I have half an inch hollow inside the rim, to retain a due supply of water. I always give as much water at once as will sink through the whole ball of compost, and do not water again till quite dry. To keep it saturated with wet, would soon destroy the plant; thus especial care is paid in watering from the first of November till the middle of March. I keep the plants during winter in a dry and well-ventilated greenhouse, and have them very near the glass. In summer I have them in a pit-frame, allowing them the entire open air, but shade them for about three hours in the middle of the day from the sun; if not thus shaded, the foliage turns brown. I sprinkle them overhead morning and evening, during spring and summer, with soft water. They relish this admirably. They are liable to the attacks of green-fly, at the under side of the leaves; and on the first appearance of one, I put the plant under a close hand-glass, and fumigate powerfully. This attention is repeated three or more times during the growing period of the year. I find, too, dipping the plants overhead in strong tobacco liquid answers equally well. No plants are more beautiful than these when properly grown, and in *profuse bloom*. I keep the plants *busky* by a constant attention in stopping the leading shoots to induce laterals.—R. EVANS, *Liverpool.*

STANDARD ROSE-TREES.—I offer to the lovers of standard roses a little plan of my own. It has succeeded admirably. An artificial prop to standard roses is unsightly, and is both exposed to decay in the run of time, and to disasters from the raging of the wintry blast. In order to do without this prop, plant three standard roses (the longer the stem

the better) in an equilateral triangle. If on a slope, one leg must be longer than the other two. They may be from 6 to 14 inches apart. Bring the stems together at the top, and bore a hole through each of them, a little below where they have been budded; then through these holes thread a copper wire, such as is used for soda-water bottles, and bring the heads of the three plants quite close together, making the ends of the wire fast. This is all. You have here a group so firm and strong that it can never break down, or ever require an artificial support. I made four groups last autumn. They are now in fine blow, and are much admired. CHARLES WATERTON, *Walton Hall, near Wakefield*—(*Gardener's Chronicle*.)

BEGONIAS.—The multitudes who admire the beautiful Begonias, which every winter grace the stoves here, surely can have no idea that they are nearly as easily managed as a *Pelargonium*, or we think they would be oftener met with in collections than they are; such, however, is the fact. After they have done flowering, they are removed from the houses to a station at the bottom of a few north wall, where they are allowed to dry and have a season of rest. When that is over, which is about this time, they are taken in hand, shifted, and placed in a pit, where, after they have started, they are cut back a little, and then grown on to be ready for the stoves in winter. The chief point in their treatment is doubtless the drying and resting in summer; for without these they would never flower so well as they do.—*Memorandum of Horticultural Society's Garden*.

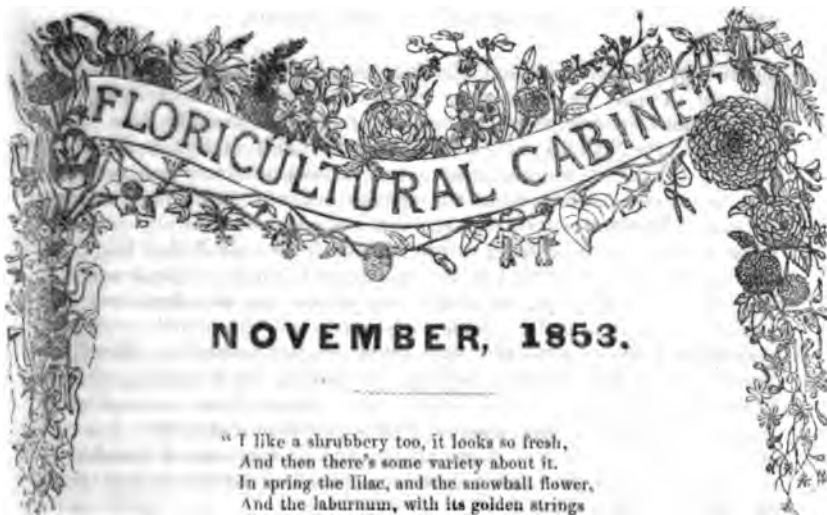
ROSES FROM CUTTINGS.—Propagation by cuttings may be performed with success all through the growing season. As soon as the forced plants have bloomed, the shoots taken off (when pruning for a second bloom) may be cut to a joint with two or three eyes, allowing the leaves to remain on all excepting the bottom eye intended to be inserted in the soil. About six of these cuttings placed round a 4-inch pot, in equal parts of loam, leaf-mould, and sand, will be sufficient. They should be placed firmly in the pots, and afterwards well watered through a fine rose, then plunged where they will have a moderate bottom-heat, and be shaded from the mid-day sun. In a few weeks, when rooted, they may be potted separately into 3-inch pots, and gradually hardened off. The same soil may be used as before, but broken up fine, or sifted, with the addition of a little sand. Cuttings will strike through the summer, and at any period when the young wood can be obtained well ripened. They may be taken as late as September, but must then remain in the cutting-pots during winter, and be potted off early in spring.

TAKING IMPRESSIONS OF LEAVES.—Having seen, a few weeks ago, in your valuable paper, a recipe for taking impressions of leaves, allow me to forward you the following, which may be new to some, and which I have found to answer very well:—Take half a sheet of fine-wove paper, and cover the surface with sweet oil; after it has stood a minute or two, rub off the superficial oil, and hang the paper in the air to dry. When sufficiently dry, move the paper slowly over the flame of a candle or lamp till it is perfectly black. Lay the leaf on it, place a piece of clean paper over it, and rub it equally with the finger for about half a minute. Then take up the leaf, and lay it on the paper or scrap-book where it is desired to have the impression. Cover it with a piece of blotting-paper, and, on repeating the rubbing, the representation of the plant will appear about equal to an engraving. The same piece of black paper will serve for a great number of impressions. A small piece of the *Davallia canariense* looks beautiful when done in this way.—GUILLAUME.

NEW ANNUALS IN THE HORTICULTURAL SOCIETY'S GARDEN.—Of new Annuals, of which, and of the older kinds, the Society has formed a new collection, the following have flowered, and are really very good; viz., *Collinsia multicolor*, *Silene pendula alba*, a profuse flowerer, dwarf, and very handsome; *Venidium eximium*, with large Marigold-like flowers; a white variety of *Nolana grandiflora*; *Cenise turbinata*, a white sort, and *C. t. formosa*, a yellow kind, which offer fair to be very useful plants, producing, when grown in tufts like Chamomile, a very good effect, and continuing on in blossom until the plants have become so exhausted as to be unable to throw up more. *Perilla Nankinensis* has not flowered yet; it looks as if it would be worth growing for the colour of its foliage alone, which somewhat resembles that of purple Orach, but darker. The scarlet, or rather brilliant crimson *Linum*, is certainly a charming flower; but the plants appear to be very delicate, and difficult to manage well. Only one or two have as yet been planted out, and therefore little can be said of its out-door appearance; but its great beauty makes it well worth attention as a pot plant. *Tropaeolum shuurmanianum*, a straw-coloured kind, streaked with red, is pretty, as is also the white *Escholtzia*, a sort which is very neat.



Androsace floribunda.



"I like a shrubbery too, it looks so fresh,
And then there's some variety about it.
In spring the lilac, and the snowball flower,
And the laburnum, with its golden strings
Waving in the wind: and when the autumn comes,
The bright red berries of the mountain ash,
With pines enough in winter to look green,
And show that something lives."—SOUTHEY.

ILLUSTRATIONS.

SANDERSONIA AURANTIACA.—THE GOLDEN FLOWERED.

THIS very neat, handsome flowering-plant belongs to the *Lily tribe*, and, as our readers will perceive by the flowers, its affinity is with the *Fritillaria* section. It is a native of South America, and flourishes in the greenhouse, also planted out in the open border in May, in a warm situation, taking them up after blooming, similar to what is done with the *Tigridias*, &c.

Perhaps all our readers know, as well as admire, the lovely spring-flowering plant, *Fritillaria meleagris*, bearing its beautiful, nodding flowers, chequered with purple and white, or purple and yellow. It is "for this peculiarity" that it has been named *Fritillary*, from *fritillus*, a draught or chess-board. Nevertheless, *fritillus* is not the board, but the *dice-box*. Its specific name is from *Meleagris*, "Guinea Fowl," as the flowers of some of the varieties are mottled or spotted like the feathers of the Guinea-fowl, and hence Gerarde named them, in 1587, Turkey-hen or Guinea-hen flowers. It and its varieties are natives of most of the European countries, and are generally found growing in humid meadows. It has many familiar English names, such as Chess-board flower, Turkey-hen flower, Guinea-hen flower, Chequered Daffodil, Lily of the dell, and Snake's-head; from which last name a meadow, where it grew

plentifully, between Kew and Mortlake, is called Snake's-head Meadow. Gerarde informs us, "they are greatly esteemed for beautifying our gardens, and the bosoms of the beautiful ladies." Soon after this flower was thus brought into particular notice, the fields of Spain, Portugal, Italy, Sweden, and Germany were successfully searched for varieties, and were sent to ornament the gardens of our ancestors in Great Britain. About seventy years ago it was discovered growing in a wild state in England, near Kew, and in Mawde-fields near Bislop Common.

Parkinson observes, that it was first named *Narcissus Caparomius*, in honour of Noel Capron, an apothecary at Orleans, who first took this plant into garden-protection and ornament, and was shortly after persecuted and murdered in the massacre of St. Bartholomew. Thus it is scarcely possible to see the chequered flowers of the Fritillary, without contemplating that the events of our private lives are not more chequered than those of nations, and in floral language this flower is placed as the emblem of persecution; and we recommend it to have a situation in all gardens, as a *memento*, "that by persecuting of others we lessen our own portion of happiness."

To this very interesting group of flowers the beautiful one we now figure belongs, and ranks as a most valuable acquisition thereto. Who can look into these ever-multiplying, mysterious beauties without having his mind enlightened, and his admiration increased towards the Omnipotent Being,

" Whose sun exalts,
Whose breath perfumes, and whose pencil paints
The fritillary :"

NOTES ON NEW OR RARE PLANTS.

ABIES BRACTEATA. BRACTEATED SILVER FIR.—A beautiful Californian species, first discovered growing on the Andes of St. Lucia by Dr. Coulter; Mr. David Douglas also met with it at an elevation of 6,000 feet, on the Californian mountains, of latitude 36° north. Both of these gentlemen failed in bringing home perfect seeds, but Mr. Lobb, the collector of Messrs. Veitch and Son, has succeeded, and now living specimens may be seen at their nursery. Mr. Lobb says, "This beautiful and singular tree forms here the most conspicuous ornament of the arborescent vegetation. On the western slopes, towards the sea, it occupies the deep ravines, and attains the height of 120 to 150 feet, and from one to two feet in diameter; the trunk is as straight as an arrow; the lower branches decumbent; the branches above are numerous, short, and thickly set, forming a long tapering pyramid or spire, which gives to the tree that peculiar appearance which is not seen in any other of the *Pinus* tribe. When standing far apart, and clear from the surrounding trees, the lower branches frequently reach the ground, and not a portion of the trunk is seen from the base to the top." The cones are particularly singular, being covered with numerous

long narrow spines, rising erect, which give them a striking appearance.—Figured in *Bot. Mag.* 4740.

BRAVOA GEMINIFLORA, THE TWIN-FLOWERED.—It belongs to the natural order Amaryllidaceæ, introduced from Valladolid and Micicacán in Mexico, where it was discovered growing on the mountains, and was sent to Sir Charles Lemon from the Real del Monte mines by Mr. Mepper. It is a plant easily cultivated in a warm greenhouse, growing about a foot high and producing an upright raceme, bearing about twenty flowers, produced in pairs, drooping, each about an inch and a half in length, tubular, of a bright orange-red.—Figured in *Bot. Mag.* 4741.

ERYTHROCHITON BRAZILIENSE.—A palm-like plant, belonging to the Pentandria class, growing in its native habitat about ten feet in height, erect and unbranched, having a tuft of long leathery leaves at the top. The flowers are produced on peduncles of about a foot and a half long, having about ten flowers on each. The calyx is about an inch and a half long, of a bright red, which contrasts well with the large white silver-shaped corolla of three inches across. It requires the heat of a stove and is very ornamental, blossoming nearly all the year round.—Figured in *Bot. Mag.* 4742.

SCHERBIA MEXICANA.—A very handsome species, closely allied to *Gloxinia* and *Achimenes*, being, "in flower" like the former, and "in growth" like the latter. It was introduced to the Royal Gardens at Kew by Frederick Scheer, Esq., who received them from Chihuahua, a northern state of Mexico, in 1850, from J. Potts, Esq. The flowers are produced in profusion, each one being about two and a half inches across the face, with a wide throat, similar in form to the well-known *Achimenes multiflora*, but much larger; the colour is bright plum, with a light throat, very distinct and fine. The foliage is very fine, green on the upper side and brown underneath. This will no doubt become a great favourite in our stoves when more generally known.—Figured in *Bot. Mag.* 4743.

BERBERIS CONCINNA. THE NEAT BERRBERRY.—A pretty species of this handsome genus, introduced by Dr. J. D. Hooker, who gathered seeds of it from small bushes, which he found growing in the Lachen valley of Sikkim-Himalaya, at an elevation of from 12,000 to 13,000 feet. It is now flourishing in the open border at the Royal Gardens at Kew. It is a neat-growing spreading bush, of about 2½ feet in height, with small handsome foliage, a shining deep green above, and snowy-white below. The flowers are numerous produced on the branches, singly, light-yellow, globose.—Figured in *Botanical Magazine*, 4744.

HEMANTHUS PUNICEUS, THE SHOWY (N. Order, Amaryllidaceæ).—The Rev. — Roupel, of Wichall, near Brighton, sent bulbs of this handsome plant from Natal, to the Royal Gardens at Kew, where, in a cool frame, it has recently flowered. It has somewhat the appearance of the old inhabitant of our greenhouses, *H. puniceus*; but it is a larger growing plant, and its flowers are in proportion. From the large bulb arises a stout "*much-spotted*," cylindrical stem, and from near the centre arises the stout, long-erect spotted flower-stalk, which terminates in a tuft of leaves, in the centre of which is the "large

umbel" of numerous long, narrow, lance-shaped, or thread-like flowers, of a rich orange-scarlet colour. The beautifully-spotted stalks, and singular rich-coloured flowers render the plant very handsome.—Figured in *Botanical Magazine*, 4745.

CYCLAMEN AFRICANUM (Synonymes, *C. Neapolitanum*, *C. macrophyllum*).—This handsome, noble species grows abundantly in Algiers. It is remarkable for the size of its leaves, which are heart-shaped, 8 inches long by 6 inches broad, and handsomely marbled with *dark* and *light* greens. The flowers are produced on long stalks, each blossom being 2 inches across, of a beautiful rose, with a carmine centre, and several spots of white around the eye. It is a magnificent species, each plant bearing from four to a dozen blossoms, which are usually produced through autumn, winter, and spring.—Figured in Van Houtte's *Flore*.

PASSIFLORA DECAISNEANA.—This magnificent flowering *Passiflora* has recently attracted much attention on the Continent. It is belonging to that section of *Passifloras* in which are *P. alata*, and *P. quadrangularis*; but it far exceeds either of these, or any other *Passiflora*, in the size and splendour of its flowers. Its foliage and general appearance is like the *P. alata*, and it is supposed to be an hybrid between that species and *P. quadrangularis*. Each flower is 5 inches across, and both the five broad lobes of the calyx and five broad petals are of a rich rosy-crimson, and the inside nectarium is composed of a multitude of thread-like fibres; the exterior "long ones" have a white ground, and each has twenty or more bars of red, blue, and white, producing a beautiful chequered appearance; around the base, too, of the nectarium there is a broad crimson rim. It is a magnificent blooming plant, flowering very freely, grows rapidly, and is highly entitled to a place in every stove, warm greenhouse, or conservatory.—Figured in Van Houtte's *Flore*, 848.

PITCAIRNIA NUBIGENA (*N. O. Bromeliaceæ*, or "Pine Apple Plants").—A native of the Columbian Mountains, growing at an elevation of from 8,000 to 9,000 feet. The leaves are long, smooth, lance-shaped. The flowers are produced in a terminal, pyramidal-shaped head, having fifty or more in each raceme. A single blossom is about 3 inches long, the lower part of which is of rich orange and sulphur colours, the upper half of a beautiful rich carmine. It is very handsome, and merits a place in every stove. M. Linden, nurseryman, Brussels, possesses this fine species, in whose establishment it has flowered.—Figured in Van Houtte's *Flore*, 847.

CULTURE OF CINERARIAS, WITH A LIST OF A FEW CHOICE KINDS.

BY MR. JOHN BURLEY, OF WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON.

THIS early spring-flowering plant is become quite a favourite with all lovers of flowers, and especially with those that require early ones in

their greenhouses and conservatories. The almost endless variety of colours and their easy mode of culture combined, make them still more valuable to those who delight in various coloured masses of flowers without the aid of artificial heat. The present month being a very desirable time of the year to procure plants required for exhibiting in the coming spring, or for decorating the greenhouse, &c., I am induced to offer for the perusal of the readers a few hints on their general culture, the soil required, and the best mode of propagating them by seeds and cuttings.

SOIL.—The best for them is one-third maiden loam, and one-third rotten dung, *decayed to mould*, and one-third leaf-mould, sand, and a sprinkling of yellow loam. The above materials must be well mixed together, and used in as rough a state as possible. The pots should be washed clean before used, as nothing can be more baneful to the health and growth of the plants if this is not duly attended to. Supposing the plants are now of good size, and well filled with roots, they should at once be shifted into larger; and great care should be taken in their various stages of growth that they do not get pot-bound, for directly this is the case the leaves become sickly and pale, and generally the green fly then attacks them, and the plant starts for bloom prematurely. There are certain varieties for *early blooming* that are particularly adapted for it; those varieties of course would suffer by being allowed to get pot-bound, as the blooms of those would be in perfection before such liability from growth or hot weather.

The best place for growing Cinerarias is in a *pit* or *frame*. The height required would be just enough to allow the flower stems to be clear of the sashes when in bloom; as all are aware that the nearer these plants are to the glass the better will be their general appearance and health. At all seasons of their growth the plants should have all the air possible, *except when the weather is severe, and will not admit of so doing*. In fine mild days in winter the lights should be taken off, so as to give them the benefit of it to dry up damp, &c., that wet weather will cause to take place. Should the wind be blowing at any time from the east, the lights should be slightly tilted on the side contrary to the direction in which the wind is blowing, as easterly dry winds retard their growth, and cause them to be unhealthy. In the winter a slight bank of dung should be raised outside the brickwork of the pit or frame, to keep off frost at nights. When the weather is very severe, let a good coating of straw and mats be placed on the top of the lights, as great care must be taken to exclude *all frost*, for the *least frost* destroys these plants. In winter, when frosty weather continues for some time, if the covering is removed from the top of the lights to admit a little sunlight, if only for an hour, it will be found beneficial to the plants, as long confinement in the dark causes them to damp off; but this can in a great measure be subdued, by having the bottom of the frame prepared in the following manner. Supposing, of course, that the ground the frame or pit is on is well drained, and the bottom of the pit level with the walk on the outside, there should be placed about three inches of rough materials, as bricks, crocks, or any other thing to carry away the water quickly; let it be well rammed, to be as

solid as possible, and on the top of the same finish off with a slight coat of coal ashes, to form an even surface to place the plants on. This will be found in winter to be quite dry, and of course no damp will arise; and being protected from frost, no other precautions will be found necessary for their safe keeping in winter. If the pit or frame be near a greenhouse, or stove heated with hot water, and where it will be convenient to construct a branch-pipe through the pit, so much the better, as the above precautionary attentions would not be requisite when sufficient heat could be turned on to do the double duty of keeping out frost and damp. Where convenient I recommend its adoption.

As the plants come in bloom they may be removed to the greenhouse or conservatory, be kept shaded, and have plenty of air; they will then continue in beauty for a long period. When they have done blooming, any variety that it is intended to propagate from should (after seed is saved from it) be placed in a frame in a shady part of the garden, removing about an inch of the top soil to allow some fine fresh soil to be placed around the plant in its stead; this will be found useful for the young off-shoots or suckers, as they break up from the bottom. Watering at this point of their culture should be applied very sparingly, or the plant will perish; in fact, what I recommend them to be placed in a frame for, is to preserve them at this time from rain and damp. By keeping them so for a short time, offshoots will be found to break up from the bottom, which must be removed; cutting them off in the fresh mould, and as close to the main stem as possible. They will then be found to strike very free. In preparing the cutting-pot for the reception of these young shoots, let them be well drained with crocks, then some siftings, upon which the same kind of soil as is used for the plants, only sifted finer and a greater quantity of sand in it, upon which, covered with a coat of, say about half an inch thick, to prevent the cuttings from damping off. After inserting the cuttings, give them a slight watering, and when well drained, place the pot under a common hand-glass or frame, and let it be kept close. Very little will be required to be done to them before they are rooted, except shading or removing a dead leaf. Scarcely any water should be given, as the humidity of a close frame is nearly sufficient until well rooted. When they are rooted, put them in small pots and keep them close for a day or two, then give a little air; increase gradually. Whilst the plants are young they require a little extra care, as the mildew is apt to attack them; if so, immediately dust the parts affected with sulphur. Green-fly is the greatest enemy to Cinerarias; thrips, too, sometimes make their appearance, but both may be destroyed by fumigating with tobacco, or syringing over and under with tobacco-water, where fumigating is not easily done. *It will be necessary to fumigate two or three nights in succession, as the first smoking in general only stupifies them*, and the next day they are at work again, and a speedy new progeny soon appears.

In raising seedling Cinerarias, it will be necessary to select a plant as dwarf-growing as possible of each decided colour; they should be placed by themselves in a pit or frame, and sow in pots or pans, as

follows: Let them be drained, similar to those recommended for cuttings, but on the surface let some fine sandy soil be used, covering the seeds lightly with the same, and in a few days the seedlings will be up. Let them remain in the pan until they are large enough to be handled safely, when they may be potted and treated as before recommended for cuttings. Should any of the seedlings have a tendency to grow tall and rank, let them be destroyed, as they will not have a flower worthy of notice, and the tall growth, too, renders it unsightly.

By pursuing the above method of treatment, I am sure the readers of this article may grow them to perfection. The above mode of treatment is adopted in this Nursery, and it is generally known that my respected employers have grown, as well as raised, the finest specimens and varieties in cultivation.

Annexed is a list of thirty-six of the best now out :

- Advancer*, clear white with blue edging, splendid form, light disc.
- Brilliant*, fine crimson-carmine, good, stiff petal.
- Catharine Hayes*, white and purple, very striking flower.
- Claude Melnotte*, fine rich plum-coloured, fine form.
- Charles Dickens*, purple-puce, large flower, first-rate form.
- Charlotte*, white and bright carmine, with extra fine qualities.
- Constellation*, clear white, with a clear fine blue edging, extra.
- Conspicua*, pure white, fine-formed flower.
- Criterion*, porcelain blue tipped with white, good form and habit.
- Duke of Wellington*, deep purple-blue, rich colour, fine form.
- Electra*, violet-purple with distinct light eye.
- Empresa Eugenie*, white with violet-crimson edging, extra.
- Estelle*, large white with puce edging, very free bloomer.
- Etoile de Vaise*, white with a plum edging, fine form, extra.
- Garland*, white and rosy-purple, fine form, extra.
- John Bull*, fine blue, good flower, the best of its colour.
- Kate Kearney*, the best clear white self, fine form.
- Lablache*, deep blue, fine dwarf habit, splendid flower.
- Lady Camoys*, white, with deep blue edging.
- Lady Hume Campbell*, white with a blue edging, good form.
- Lady of the Lake*, fine white and lavender, large flower.
- Lord Palmerston*, deep blue, dwarf, and very free bloomer.
- Lord Stamford*, white, finely edged with porcelain blue, splendid form ; decidedly one of the best flowers yet raised.
- Marguerite d'Anjou*, dark crimson, maroon disc, fine bold petal.
- Marianne*, white and rosy-crimson, quite round, stiff petal.
- Mr. Sidney Herbert*, shaded purple, fine bold flower.
- Mrs. Beecher Stowe*, white, with purple edging and disc.
- Mrs. Sidney Herbert*, white and carmine, distinct and fine.
- Mr. Seagrave*, good dark blue, extra good quality.
- Nonsuch*, crimson plum, fine form, good flower.
- Novelty*, damson, with light disc, large rich flower, extra.
- Picturata*, clear white, with deep edging of rosy purple, lavender disc, splendid form ; the best in cultivation.
- Prince Arthur*, scarlet crimson, fine stout flower, extra.
- Rosalind*, white, tipped with purple, grey disc, splendid form.

Rose Mary, crimson and white, fine petal.

Tyrus Queen, fine blue, extra good form.

The above varieties would form an unequalled collection. Almost all colours are there.

HISTORY OF FLOWER-GARDENS.

By AN AMATEUR FLORIST, MIDDLESEX.

It does not appear that either the Greeks or Romans indulged a taste for flowers; none at least that would imply their having gardens set apart for the culture of these pleasing objects; or that they ever endeavoured to improve their own wild and indigenous plants, or imported others from foreign countries. We can only consider the florid description of the garden of Alcinous as the effusion of poetry; and those of Cicero and Pliny were only vineyards with grottos, alcoves, and arbours. It is not, in fact, above two centuries ago that our gardens were probably, in point of taste as well as of products, even inferior to those of the Greeks and Romans; and for the most of the embellishments we now possess of flower-beds, shrubberies, and conservatories, we are indebted to foreign countries. The nations among whom a taste for flowers was first discovered to prevail in modern times were China, Turkey, and Persia. The vegetable treasures of the eastern world were assembled at Constantinople, whence they passed into Italy, Germany, and Holland, and from the latter into England; and since botany has assumed the character of a science, we have laid the whole world under contribution for trees, and shrubs, and flowers, which we have not only made our own, but generally improved in beauty and vigour. The passion for flowers preceded that of ornamental gardening, which still continued to be totally destitute of taste. The Dutch system of straight walks, enclosed by high clipped hedges of Yew or Holly, everywhere prevailed, and Tulips and Hyacinths bloomed under the sheltered windings of the "walls of Troy," most ingeniously traced in box.

Notwithstanding all the ridicule that has been directed against Brown and Repton, we are certainly indebted to them, in no small degree, for expelling the stiff formality of the Dutch system of ornamental gardening, and enlarging our prospects by the exchange of walls and high trimmed hedges for the sunk fence. But the person who succeeded in bringing us back to the point nearest to nature was Kent. It was he who, as Walpole observed, chastened and polished, not transformed, the living landscape. Where the united plumage of the ancient wood extended wide its undulating canopy, and stood venerably in darkness, Kent thinned the foremost ranks, and left but so many detached and scattered trees as softened the approach of gloom, and blended the chequered light with the thus lengthened shadows of the remaining columns. From this time the taste in pleasure-grounds, shrubberies, and ornamental gardening has gradually improved, and may now be

said to have reached a degree of excellence in this island unrivalled in any other part of the globe.

It is certain that no country on earth can boast the assemblage of shrubs and flowers now to be found in Britain. Most countries have a predilection for some particular plants, while all the rest are disregarded. In Turkey, for instance, the flowers which, after the Rose, are principally esteemed, are the *Ranunculus* and *Tulip*, the latter of which grows wild in the Levant; but through accident, weakness, or disease, few plants acquire so many tints, variegations, and figures as the *Tulip*. This gaudy flower was first cultivated in Italy about the middle of the sixteenth century, under the name of *Tulipa*, obviously derived from *tuliband*, which in Turkish signifies a turban.

(To be continued.)

ON THE EUPHORBIA JACQUINIFLORA, (OR FULGENS).

BY A NOBLEMAN'S FLOWER-GARDENER.

If we take a retrospect of the plants that have been introduced into the stoves of Great Britain within some few years, not one has preference to the *Euphorbia Jacquiniflora* (or *fulgens*): the length of time the flowers continue expanded, the elegant growth of the plant, if properly managed, and its very long spikes of rich orange-scarlet flowers, give it a decided pre-eminence among stove plants. This lovely plant is a native of Mexico, and was introduced into Germany a few years ago, through Baron Kerwinski, and from thence into Britain by Mr. Runch.

Cultivation.—Mix equal quantities of loam, peat, and rotten cow dung with a little sand. If cow dung cannot be got, any very rotten manure will do. *Cuttings* will strike very freely in sand. After they are struck, pot them off into sixty pots, and shift them regularly as the pots become full of roots. It is very necessary to stop the terminal shoots frequently, otherwise the plant will grow very tall and slender, and, as gardeners term it, be long-legged. When the pot is full of roots the plant will flower, even if it be small; but it must be observed, that if cultivators desire to have large plants, they must shift them frequently until they wish them to display their beauteous flowers. It is a charming plant for winter and early spring bloom; in fact, by proper treatment, a succession can be had all the year, and nothing more lovely than spikes a foot or more long of its showy brilliant blossom, each flower nearly the size of a sixpence. It does well in a hot-bed frame of moderate temperature, as well as in the stove. It may be kept during winter in the greenhouse, but must, during the season of rest, be kept nearly dry, and give water when you want again to promote its growth.

WINDOW-GARDENING.—THE GENUS CACTI.

BY MR. J. RANCHLEY TANTON.

ALLOW me once more, through the medium of your excellent and *precieux* work, to accede to the wishes of a lady botanist who is well-known in the world, not only as a great patron of the science of floriculture, but her merits as a botanist stand unrivalled. At this fair member's request, I wish to forward a few brief remarks on the above magnificent tribe of plants :

It is universally known that the Cactaceæ is an extensive order, containing a vast many succulents, chiefly inhabitants of the New World, and America appears to be the exclusive station of this order. They are abundant in the tropics, and hot, dry, exposed situations appear to be their favourite resort, for which they are peculiarly adapted by having imperfect evaporating pores on their epidermis, a circumstance which has long been shown, that accounts for the excessively succulent state of their tissue. These plants are of various habits and characters, but now separated into several distinct genera, as *Cereus*, *Echinocactus*, *Melocactus*, *Mamillaria*, *Opuntia*, &c.; and by many authorities the original genus is entirely superseded ; but being regarded as the type of a remarkable and large order, it is thought by some it should be retained. It cannot, however, be said to contain but a few species, these being divided into two sections, one for stove culture, the other for the cool greenhouse. The latter is the section of which I now treat, being most proper for *window ornaments*, likewise better suited for the cultivation they would receive at the hands of those who are ordained to rule and govern domestic economy, and similar household affairs. In taking the cultivation of the *greenhouse* species and varieties under consideration, I observe they are of the easiest possible culture ; likewise in propagation, as pieces taken from the plant any time during summer (the earlier the better) and laid on a shelf or similar place for at least one week, then planting them in pots filled with moderately dry compost ; the pot well-drained, and giving little or no water, as circumstances may require, till they are fully established ; and should the period happen late in autumn, water must be withheld till the following spring, at which time they will require shifting. These plants delight in a *rich soil*, composed of fibrous loam, leaf mould, and reduced manure, mixed up with numerous pieces of broken bone and small potsherds, and a quantity of them placed at the bottom of the pot, that an effective passage may be secured, as all Cactaceous plants are very impatient of excessive moisture. When the plants have attained the required maximum size, they will require the soil renewed once a year, and to be liberally watered during the summer and growing season, with a gradual reduction as the resting season advances, and which is the period most precarious, as the plants during winter, in sitting-rooms, acquire a very languid appearance, which the attendant is often led to conclude arises from want of water, and consequently applies it, which is most injurious, for at this season the vital powers are stopped ; the plants cannot, therefore, take up and assimilate that

which is thus supplied. Therefore, if their resting season is not attended to in due form, a production of ill-formed shoots instead of flowers will be the result, if the plant is not even destroyed. Consequently rest (as I pointed out in a previous article) is the foundation-stone of a successful bloom. At early spring, blossom buds will appear, and when they have attained a necessary degree of development, water must be applied, *commencing* gradually and moderately at first, and the flourishing buds will begin to swell rapidly. Then an application, twice a week, of diluted manure-water, made from sheep and pigeon's dung will be very beneficial at this period. The plants become gross feeders till their petals begin to unfold, when the manure-water may be withheld till after flowering, when it must be again resumed to support the rapid growth which then ensues; at the completion of which the plant should be removed outside the window, or in a situation commanding a *full sun* to ripen their wood necessary for the support of the blossom the ensuing year; and by *attending* to the last-mentioned rule, the progress of the plants will be an uninterrupted course of vigour, and the resulting bloom most satisfactory. As regards inuring, many of the *stove* species may, by the above treatment, be brought to flourish in the sitting or drawing-room window, among which is the beautiful *Epiphyllum truncatum*, which plant, although under many appellations, I here choose to continue the name by which it is commonly known—(there are three varieties of it, too, equally handsome, namely, purple, rose, and flesh-colour). The generic name *Epiphyllum* is derived from the Greek *epi*, upon, and *phyllon*, a leaf, in allusion to the station of the flowers upon the leaf-like branches. The most beautiful of the greenhouse group is the *Cereus speciosissimus*, as its generic name implies, being derived from the Latin word *cereus*, signifying *pliant, like wax*; referring to the shoots of some of the species being easily bent. According to many physiologists, the fruits of many of the Cacti are extensively used as an article of dessert, many of them being similar in properties to that of currants; others are valued as palliatives of intermittent fever, in consequence of their refreshing subacid juice.

SUMMER TREATMENT OF GREENHOUSE PLANTS.

BY THE FOREMAN OF A LONDON NURSERY.

ON account of the variety and number of greenhouse plants, it is rather difficult to reduce them to any one certain rule; not only because they are less expensive, and consequently more cultivated, but also that our milder climates, are found to produce plants in greater abundance than the Torrid Zones. Therefore the business of shifting is, in general, a weighty concern. To be enabled to execute it with regularity, every preparation should be previously made, and the different sorts of mould laid up in a shed; as well to keep them from becoming too wet for use by sudden showers, as from getting too dry by the action of the sun, or arid winds, which may be expected at this season. Also on wet days (if nothing more urgent is to be done) let a quantity of old broken pots be made small, to serve for draining the

tenderer sorts; the coarse siftings of peat being sufficient for the stronger growing kinds. Whilst I write about the *general* potting, I must observe, at any other time, re-pot when a plant requires it.

Things being thus in readiness about the middle or end of May, the *general shifting* should be commenced: in order to which, let some of the plants be carried to the shed, and carefully proceeded with; observing, above all things, not to injure the roots, but gently to loosen them with the hand in such manner, that the mat of roots, which is generally formed on the outside, may not remain entire; whereby they will soon strike into the fresh mould that encompasses them; very long roots may be shortened.

Greenhouse plants for the most part require a considerable share of pot room, as many of them are very free growers; but still great caution is necessary, to avoid over potting the tender weak growing kinds. When shifted, let them be tied up, if requisite, and well watered. It will be also necessary to shade them for a few days from the influence of the sun and winds until they are perfectly established in the fresh mould. Any dead or ill-grown parts can now be with propriety cut away, so as to give the heads a regular neat appearance; by observing this process, it will be found, that though a temporary check may be the consequence, they will soon flourish and do much credit to the operator by their healthy appearance and progress.

It being mentioned that shelter, and occasional shade is necessary for a few days when they are first placed in the greenhouse, I must add, that should the weather prove dark and cloudy, this work may be omitted; however, if hot, sunny weather ensue, it will be indispensably necessary; and also, to syringe them overhead twice or thrice a-day when first potted.

By the end of May it will be time to prepare the out-door departments in which it is intended the plants should stand during the summer months.

The most eligible situations for this purpose are the north aspect of vacant walls or hedges, where they will be a little shaded from the noonday sun, or between rows of close hedges, particularly planted and solely appropriated to this purpose. I can by no means espouse or recommend the practice of setting them close under the shade of branches of large trees, as the plants are thereby inevitably drawn into a weak state in a few weeks, and those who adopt such situations are not unfrequently under the disagreeable necessity of throwing away many of perhaps their most rare plants every autumn; and even those that remain will have a bad, unsightly appearance. Indeed shelter from the *winds* is the great desideratum, to prevent their being upset; for in my opinion most greenhouse plants are fond of the *warmth of the sun*, except when recently potted, provided their roots are kept moderately moist. Let us look for a moment to the arid mountains of the Cape, and there we shall find them exposed to its full glare, and perhaps without water for months: their roots, however, can penetrate deeper there than they can possibly do in pots, so that life is preserved; and as soon as the periodical rains commence, they resume in a very little time their verdure, and "breathe their balmy fragrance all around."

Some gardeners' practice is to plunge them amongst the shrubs and flowers of the pleasure-ground; this answers pretty well with the strong growing kinds, such as myrtles, geraniums, coronillas, &c., old plants or supernumeraries that will not be wanted to house in the autumn, and even has a very pretty effect when judiciously done; but it will by no means do for the tenderer species. Therefore, upon the whole, the most unexceptionable situations are such as at the same time afford a moderate portion of shade, and are so situated as to break the force of those strong gales which frequently blow in the summer and early autumn months, and yet allow that free circulation of air so necessary to the well-being of plants in general, and at all seasons. Having fixed on the place they are to stand, it must be thoroughly cleansed from weeds, and the hedges, if any, neatly clipped. It should then be well rolled, to make it perfectly firm and level; over it a layer of good lime, slacked, and made into the consistency of thick whitewash, mixed with gas tar, should be poured, and allowed to soak into the surface: this is a preventative against worms getting into the pots, which is always injurious to the plants. When this is dry, let about an inch of finely-sifted gravel or sand be regularly laid on and firmly rolled.

Being thus prepared, the plants may be brought out and set regularly and level on the surface, in whatever form may best suit the situation, or the fancy of the proprietor. Even on this subject a few observations may not be unnecessary.

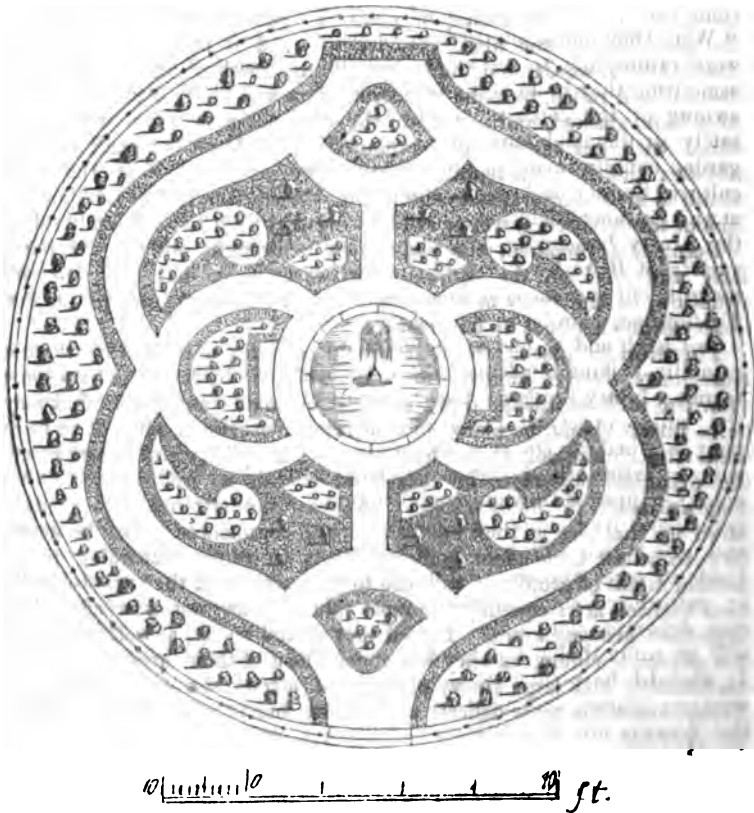
Therefore, in placing them, it should be endeavoured to give them a loose, easy, but yet judicious manner; which is by far more handsome than the stiff, shorn-like front, admired by some: any plants that may be in flower should be placed in conspicuous situations, but not so as to make the clump look in the least tawdry; simplicity and neatness are the principal objects to be considered in this as well as the other decorations of the flower-garden. Another circumstance to be remembered is, that now as their summer-growth commences, it will be necessary to allow each plant sufficient room to spread according to its natural habit of growing: and also to be careful that the curious tender sorts (which are frequently the most valuable) are not crowded by the large free-growing kinds. Indeed they should be set, as well as heaths, in a separate clump, as they lose a good deal of their interest, by being confounded with large showy plants that attract the eye, at the first glance, from the more delicate and minute, but to many not less attractive species.

Should the weather prove dry when they are thus set in their clumps, they must be freely watered, particularly in the afternoon, when the sun has nearly run his course. A good washing, also, with an engine, or syringe, at times, in the absence of the sun, will be of considerable service to them; but if any individual plant should at any time become too wet, let it be placed apart from the rest, and not watered again until it evidently requires it. This is a circumstance which I shall have occasion to mention hereafter; all that is necessary now, for a few weeks, is to pick off dead or withered leaves, and weeds of every description; and a regular attention to the directions already given.

PLANS OF FLOWER-GARDENS.—By T. RUTGEZ, Esq.

No. 12.

A copy on an enlarged scale of the annexed design was furnished at the request of a friend, and, being approved of, I had it carried into effect. The circle stands in the middle of Morice-square, in the



town of Devonport, and is enclosed by a dwarf wall, coped with stone, and surmounted by an iron palisade. The basin in the centre has a fountain, and is well stocked with gold and silver fishes. The recesses, one on each side of the basin, are intended for garden seats, to be overshadowed by trellis-work and creepers. A place for a seat is also provided at the farthest part of the circle, opposite the entrance.

The portions of grass, with the grass verges, give a lively appearance to the whole, as well as flowers, which are liberally supplied and interspersed among the choice and light-growing shrubs during the summer.

MISCELLANEOUS SECTION.

SOME OF THE HANDSOME PLANTS OF CHINA.—“Ah, you have come back!” “Are you well?” “How did the plants get home?” “Were they much admired in England?” were the questions which were rapidly put to me by the old nurseryman and his sons; at the same time they brought a chair, and asked me to sit down under the awning of the cottage. I told them that most of them had arrived safely in England, and that they had been greatly admired. This garden contains many of the beautiful plants introduced by the Horticultural Society of London, from 1843 to 1846. Amongst some pots at the entrance there were fine plants, of the now well-known *Weigela*, the pretty *Indigofera decora*, *Porsythia viridissima*, and a fine white variety of *Wistaria Sinensis*. Round the sides of the ditch were many magnificent specimens of *Edgeworthia chrysantha*, and *Gardenia florida Fortuneana*, growing in the open ground. Some of the *Gardenias* were 4 feet high and 15 feet in circumference. When covered with its large camellia-looking blossoms, it is extremely handsome, and at all times forms a pretty evergreen bush. In a bed in the middle of the garden the white variety of *Platycodon grandiflorus* was in full bloom, and near it a bed of *Dielytra spectabilis*. Both these looked very handsome, particularly the latter; its large purse-like blooms, of a clear red colour, tipped with white, and hanging down gracefully from a curved spike, and its mountain-like leaves, render it a most interesting plant, and one which will become a favourite in English gardens. Several kinds of roses were growing in pots, and amongst them the new yellow, or salmon-coloured, introduced by the Horticultural Society. This rose deserves more notice at home than it has yet had; doubtless it will be more thought of when it is better known and properly treated. It should be planted out at the foot of a wall with a southern or western aspect, and allowed to scramble over it. It grows rapidly; the flowers are of a striking colour, and are produced in great profusion. Fine plants of *Viburnum plicatum*, and *V. macrocephalum*, were also noticed, both in pots and also in the open ground. I also observed some young plants of the interesting palm-tree (*Chameroops excelsa*?), which I have already noticed in the earlier pages of this work. It is perfectly hardy about Shanghai, and thrives there, unprotected, throughout the severest winters. There were other palms, yet this was the only one that seemed hardy. Here were also some beautiful peach-trees, with double flowers. Two of these have already been described by Dr. Lindley, and named the double white, and double crimson peaches. But, fine as these undoubtedly are, there is a third,

far more beautiful and striking than either of them. This produces large double white flowers, which are striped with red or crimson lines like a carnation. A tree of this variety, in full bloom, is one of the most beautiful objects that can be imagined. These double peaches seem to be particularly well adapted for forcing, as they form their flower-buds fully in autumn, and are ready to burst into bloom with the first warm days in spring. A little artificial heat, therefore, will bring them into full flower about the new year, or any time from that period up to March. As spring flowers, they are highly prized by the Chinese. Itinerant gardeners carry them about the streets for sale in the northern Chinese towns. The flower-buds were then just beginning to expand; the buyer puts them into pots, gives them a little water, and places them in his window or sitting-room. In a day or two the buds burst, and the little tree is one mass of bloom. In this state all the three varieties are very beautiful; but I think the carnation-striped one is the handsomest of them all. In the centre of the South Garden there is the family tomb—a large mound of earth, covered with many pretty flowers. Here the old man's forefathers, for many generations, lie buried, and here he will sleep among the flowers beloved in his lifetime. This garden contains a good assortment of shrubs and trees which have been longer known than those I have enumerated. There are some beds of Reeve's *Spiræa* (*S. Reevesiana*), a beautiful shrub; the Chinese Juniper, *Hibiscus syriacus*, *Wistaria sinensis*, *Lagerstræmias*, plums, and the favourite *La-inæ* (*Chimonanthus*), with which Chinese ladies decorate their hair. I had now made the circuit of the garden, and came to the little wooden bridge, by which I entered, to the gardener's house.

When I reached Chusan, in latitude 30° north, I found a remarkable change in the appearance of the vegetation. Tropical forms had entirely disappeared, or were rarely met with. Although the summers were as warm, or even warmer than they were in the south, yet the winters were nearly as cold as those we have in England. At this place, and all over the provinces of Che-kiang and Kiang-nan, the *Glycine* seemed to be at home. It grew wild on every hill-side, scrambling about in the hedges by the footpaths, and hanging over and dipping its leaves and flowers into the canals and mountain streams. But by far the most beautiful effect is produced when it attaches itself to the stems and branches of other trees. This is not unfrequent in Nature, and is often copied by the Chinese, and introduced into their gardens. One can scarcely imagine anything more gorgeous or beautiful than a large plant of this kind, in full bloom. Its main and larger branches are entwined round every branch of the tree, and from them hundreds of small ones hang down until they nearly touch the ground. The whole of the branches are covered with flower-buds, which a day or two of warm weather brings rapidly forward into bloom. To form an idea of the effect produced by these thousands of long lilac racemes, one must imagine a floral cascade, or a weeping-willow covered with the flowers of the *Glycine*. There are some large specimens of this kind on the Island of Chusan;

one in particular was most striking. Not content with monopolising one tree, it had scrambled over a whole clump, and formed a pretty harbour underneath. When I saw it last it was in full flower, and had a most charming appearance. The Chinese are fond of growing the *Glycine* on trellis-work, and forming long covered walks in the garden, or arbours and porticos in front of their doors. There is a remarkable specimen in the garden of a mandarin, at Ning-po. Growing in company with it is the fine new variety introduced lately by the Horticultural Society of London, and described in the *Journal of the Society*. In foliage and general habit the two kinds are nearly alike, but the new one bears long racemes of *pure white* flowers. The kind old gentleman to whom the garden belonged allowed me to make layers of this plant on the top of his house; and during the summer months, when I was travelling in other districts, attended to them and watered them with his own hands. I visited several nursery-grounds, about ten or twelve miles to the eastward of Shanghai. In one of these nurseries I found a *yellow* *Camellia*, and it was in bloom when I bought it. It is certainly a most curious plant, although not very handsome. The flowers belong to the *Anemone*, or *Warratah* class: the outer petals are of a French-white, and the inner ones of a primrose-yellow. It appears to be a very distinct species in foliage, and may probably turn out more hardy than any of its race. — *Fortune's Journal to the Tea Countries of China*.

PLANTS FOR PILLAR DECORATION.—Experience of the usefulness of the common *Heliotrope* (*Heliotropium peruvianum*) enables me to come forward as its advocate; and I can justly place it foremost in the rank of plants for adorning pillars, wires, or any other suitable situation of a cool conservatory where a graceful pyramidal appearance would be deemed an acquisition. Few lovers of plants and flowers pass through our conservatory without granting their tribute of praise on the subject under notice, which runs up a pillar to the height of 14 feet, and about 3 feet diameter at the base, tapering in its upward progress to a couple of leading shoots, forming a pyramid of pendent branches, with clusters of flowers hanging gracefully from the extremities of each of them. I find it requisite to pinch all the laterals proceeding from last year's growth of the leader, or any other strong shoot protruding without the boundary; it induces them to throw out a number of weaker stump or flowering shoots, checking their vigour and benefiting those underneath, by directing the current of sap to them; and from their spurred nature from repeated prunings they break with more shoots than are required; the weakest should be weeded out, to allow the others the benefit of the sun and air, when they will shoot out rapidly and produce that much-admired form, the pyramid. The usefulness of this plant for the conservatory or cut bloom may be best understood when I say, that during nine months of the year it is covered with bloom. I believe it would prove perpetual were pruning not requisite to keep it in form. That operation is performed in the beginning of March; in a few weeks after, it is covered with a lively green, and its growth encouraged during that season with frequent waterings of liquid manure, which are discontinued in August. After that time, the plants placed upon the

soil wherein it grows supply it plentifully with the water that has passed through them; and the increasing moisture of the atmosphere and withdrawal of sun heat make its wants more moderate. An interesting companion opposite to it—in habit and foliage resembling it very much, whilst in the colour of the flowers it forms a decided contrast—is the lovely and rich scarlet-flowered *Salvia gessneriflora*. Under the same treatment as the *Heliotrope* it thrives equally well, and flowers abundantly during the winter and spring months. *Sollya linearis*, covering a third pillar, may be classed next it in usefulness for cut bloom; but it is inferior to none of the former in exhibiting a graceful habit, densely studded over with its lovely blue blossoms. It is said to grow best in a mixture of peat and sand; here it grows luxuriantly and blooms profusely during the entire spring and summer.

(*To be continued.*)

INSECTS ON CARNATIONS.—During the past month I have found numbers more than ordinary of a small black fly nestling in groups in the hearts and on the tender leaves of the Carnations and Picotees under my care; my *Camellia* buds were similarly attacked last season. I have found an infusion of the young tips of Elder (scalded by boiling water, and when cold used through a fine rosed pot over-head), not only to destroy the black fly, but to keep away the green fly also; and it does not prove in any way injurious to the growing stock; a slight discoloration of the foliage may follow its application, but this is removed by the first shower of rain.—*J. Creed, Wace-cottage, Holloway. (Gardeners' Chronicle.)*

WINTER-BLOOMING PELARGONIUM.—I have found Bennett's Fanny to be an excellent variety for winter flowering. During three seasons I have had it in full blossom in a cool house shortly after Christmas. In habit it is very dwarf, the truss is large, and carried well up above the foliage. The upper petals are very dark, the lower ones pink, with a large clear white centre, and edged all round with a white belt; it is very showy and attractive, and a profuse bloomer, flowering freely even in very small pots. Those who make bouquets during winter should not be without it.—*R. Francis, Florist, Worcester.*

BEAUTIFUL BED OF FLOWERS AT CLAREMONT.—"This new bed was made with the old rose-scented *Geranium (Pelargonium graveolens)*, mixed with the *Verbena, Robinson's Defiance*. It was a large circle, and the *Geranium* was quite thick all over the space; and very likely few other *Verbenas* could stand so much smothering, for I could hardly see a leaf of the *Defiance*, but the bloom was as regular and thick as if there was no *Geranium* in the bed, and well up above the leaves, making the deception complete a short way off."—(*Dr. Beaton, Cottage Gardener.*)

MEANS OF FASTENING LEATHER UPON METAL.—The metal is washed with a hot solution of gelatine, and the leather, previously steeped in a hot infusion of gall-nuts, pressed upon the surface and allowed to cool. It then adheres so firmly that it cannot be separated without tearing.—*Allgemeine Polytech. Zeitung, March 1852. —Pharmaceutical Journal.*



A NEMONES and RANUNCULUS still plant for early spring bloom. A number of the Turban Ranunculuses in patches are very showy. *Tulips*; plant immediately. A bed with raised sides six inches high is usually preferred, and having the surface of the bed a few inches higher in the middle than the sides. Let the bulbs be covered four inches deep. *Hyacinths* for a bed should be planted directly. *Auriculas*, *Polyanthuses*, &c.; allow a free circulation of air between the sides of the pots, raise the frame a few inches, and leave an opening. *Carnations*, &c.; have all air possible, but guard from excess of rain and severe frost. *Dahlias*; take up on a dry day; allow the stem to remain about half a yard long at present; in a fortnight afterwards cut it to six inches or less, if tolerably dry. *Chrysanthemums*; allow all air possible, to prevent them being drawn up weakly. Every other watering at the roots must be with liquid manure. Thin the flower-beds, and if required for exhibition only retain one flower to a shoot.

PINK AND PANSY BEDS.—Have small sticks pricked among the shoots to prevent the plants being twisted off by the wind. *Mildew* sometimes attacks *Carnations*, *Pinks*, and *Pansies*, and causes the leaves to be spotted; dust the foliage under and over with sulphur. *Hollyhocks*—the sooner planted, the better will they bloom. *Lobelias* of the tall class, in beds, should be taken up and placed in shallow pans or boxes, closely together; give but little water during winter; they may be kept in any cool place free from frost and damp. *Verbenas*; keep near the glass, give all air possible; only preserve from fogs and frost, and examine the underside of the leaves to see if green-fly be there; if so, fumigate directly. If *mildew* appears apply sulphur, only give water to the roots to keep the soil just moist.

DRESS FLOWER-BEDS.—Give an addition of fresh soil and manure, divide and replant perennials, biennials, &c. Let a liberal profusion of spring flowering bulbs and herbaceous perennials, &c., be planted in beds and borders near to the dwelling-house, as *Crocus*, *Aconites*, *Snowdrops*, *Scillas*, *Hyacinths*, early *Tulips*, &c.; and *Hepaticas*, *Double Primroses*, *Polyanthuses*, *Auriculas*, *Wallflowers*, *Brompton Stocks*, &c.; also the little *Arabis grandiflora*, *Draba aizoides*, *Erica carnea*, *Dielytra spectabilis*, *Sedum oppositifolia*, *Turban Ranunculus*, and *Anemones*, &c. They produce a cheerful appearance during the spring months, and are handsome to be viewed from the rooms. If severe frost occurs, protect beds of bulbs. Prick branches of yew, fir, &c., along the sides of Pink or Pansy beds, to break the force of strong wind. The stock of bedding plants must be looked after, whether in

cutting, pots, or otherwise ; allow plenty of air on all suitable occasions ; don't *over-water*, rather have them nearly dry during the season of rest.

IN THE GREENHOUSE, &c.

Pelargoniums.—Repot the show class, give plenty of air, not too much water ; fumigate if green fly appear. Stop the lead of every shoot of the large plants which are wanted to be in bloom in June, towards end of month, and also of the young plants struck the past summer, to cause them to push side shoots. *Azaleas*, for early bloom, place in higher heat, and keep those *cool* which are to bloom late. *Calceolarias*, keep in a cool place just from frost ; cuttings strike well now. *Tropæolum tricolorum*, and the other tuberous roots must now be potted, if to bloom next season. *T. Lobbianum*, *Hockerianum*, &c., encourage ; they will bloom through winter. *Salvia splendens*, fulgens, and *gemeriflora* encourage ; they are fine for autumn and winter bloom. *Chinese Primroses*, repot. *Chrysanthemums*, keep in airy cool situations. *Oxalis elegans*, and others will bloom by due attention. *Neapolitan and Russian Violets* have in abundance in frames. *Ixias*, &c., now pot and place in a cool situation, or plant out of doors in a warm place. *Cactus truncatus* will now show for bloom. *Cinerarias* keep in a frame near glass, but preserve from frost. A few may be forced for winter bloom.

FORCING STOVE OR PIT.

Now have a stock of all the winter flowering plants brought in ; begin with a temperature of about 55°, and increase gradually up to 75°. In addition to all bulbs, see the list in last month's calendar of winter blooming plants.

SHRUBS AND TREES.—If evergreen shrubs and trees were not planted last month as directed, they should be immediately ; the earlier the more successful.

Plant Roses now ; it is the best time. Give six inches thick of well rotted dung to all standard and other roses ; take off a portion of soil, lay on the manure, and cover with earth. Prune Roses of any class but the China, Tea, and Banksian.

BRIEF REMARKS.

CULTURE OF THE CALCEOLARIA.—I make my first sowing about the middle of July, and another about the 1st of August, in pans half filled with drainage, and then filled up with a mixture of about two-thirds light loam, the rest peat and leaf-mould in about equal proportions, with a good sprinkling of silver-sand, all sifted tolerably fine ; the pans must then be thoroughly watered, so as to wet every particle of soil, and allowed sufficient time to drain before sowing ; the seed may then be sown thinly, and a little finely-sifted soil scattered very lightly over it. The pans may be placed beneath a hand-glass, under a north wall, or in any other shady situation, and kept tolerably close until the plants make their appearance. The pans must be kept moist, merely sprinkling with a very fine-rosed pot ; great care is required here, for if they are at all heavily watered, the seed being so very fine, is all carried away with the water. When the plants make their appearance, more air may be given them ; as soon as they will bear handling, they should be pricked out into other pans (prepared in the same manner), about 2 or 3 inches apart. They will soon make nice little plants, and may then be potted off singly into 3-inch pots, using a mixture

of about two-thirds tolerably light turfy loam (not sifted), the rest leaf-mould and dung from an old mushroom-bed, in about equal proportions, with a good sprinkling of sand; they may then be placed in a cold pit, and allowed plenty of air. The plants will soon progress rapidly; as they fill their pots with roots, they must be shifted into larger sizes, until they are in 8-inch and 11-inch pots, which are large enough for any *Calceolaria*. Frequently fumigate, to keep down green fly. In winter just keep frost from them, and have plenty of air, and keep rather dry in the pots. As spring advances, give more, and occasionally weak liquid manure.—*An Exhibitor.*

BERBERIS.—I had not lost sight of the beautiful new *Berberis*, which I have already described, and which I was most anxious to procure, in order to introduce it into Europe. I had frequently desired Wang to endeavour to procure me some young plants of it from some garden in the neighbourhood, as I could not believe it to be so rare as only to exist in the old place where I had first seen it. However, he either could not find it, or, what was more probable, he gave himself no trouble about the matter. Knowing the potent influence of dollars, I called three or four of the family around me one morning, and, showing them the leaf which I had brought with me, promised a dollar to any one of them who would bring me a small plant of the same shrub. One of them went out immediately, and, to my surprise and pleasure, returned in less than five minutes with a fresh leaf of the plant in question. "That will do," said I; "that is just the thing I want; bring me a young plant with good roots, and I will give you the promised reward." They now held a consultation among themselves in an under tone, and at last said that the plant in question had some peculiar medical virtues, and that the lucky possessor would not part with it. "Sell me this one," said I, "and you will be able to buy a dozen others with the money." "No," one of them replied; "my uncle, in whose garden it is growing, does not want money; he is rich enough; but he requires a little of the plant now and then when he is unwell, and therefore he will not part with it." This was very provoking; but the Chinese were firm, and there was nothing for it but to go, as sailors say, "upon another tack." This I determined to do. "Well, at all events," said I, "let me see the plant; don't be afraid, I shall not touch it." For some time they refused to do even this, but through Wang's influence they were at last induced to consent, and led the way down to a small cottage garden, completely covered with weeds. There the beautiful shrub was growing, apparently neglected and left to "bloom unseen." It seemed very valuable in the uncle's estimation, and he would not part with it, although I tried hard to induce him to do so. It might be that he really valued its medicinal properties, but as it must be common enough in that part of the country, he could easily have replaced it; it was not unlikely, therefore, that he supposed I should offer some very large sum to induce him to part with it.

On the following day another relation of Wang came to me in a secret manner, and informed me that he was acquainted with another place where the same plant was to be had, and that for a consideration he would go and fetch some of it for me. I engaged him at once, merely telling him that he must bring young plants with good roots, otherwise they would be entirely useless to me. This he faithfully promised to do, and he kept his word. In the course of a day he returned with three good plants, which he sold to me, and which I afterwards took back to Shanghai. These are now safely in England.—*Fortune's Journey to the Tea-districts of China.*

PANSIES FOR EXHIBITION.—A correspondent, I observe, lately asked for a list of the best Show Flowers. The following twenty are excellent, and were selected out of twenty-two stands I saw exhibited during the past season:

Sir John Cathcart, Downie's Beauty, Hales' Monarch, Earl of Mansfield, Flower of the Day, Dickson's Royal Standard, Sir Joseph Paxton, Adela, Duke of Norfolk, Great Britain, Sambo, Sir John Franklin, Supreme, Mrs. Beck, Queen of England, Sir Robert Peel, Rainbow, France Cyclope, Aurora, Euphemix.—*J. Smith.*

THE GREAT NATIONAL TULIP EXHIBITION, HELD AT THE CORN EXCHANGE, NOTTINGHAM, 1853.—Twelve hundred flowers were placed for competition, and the following were in the principal stands, &c., to which prizes were awarded; and as they contain all the best kinds, they will furnish our readers with what may serve to assist in making purchases of the first-rate for planting next month. By looking over the entire, it will be ascertained which sorts were most general.

CLASS A.—The National Tulip Society's silver cup of ten guineas, with the following inscription,—"Presented to Mr. Joseph Godfrey, for the best twelve dissimilar blooms, at

the National Exhibition of Tulips, held in Nottingham, 1853," was awarded to Mr. Joseph Godfrey, of Chellaston, Derbyshire, for two feathered and two flamed of each class, namely, Sovereign, Heroine, Queen Charlotte, Captain White, Triomphe Royale, Bagot, Magnum Bonum, Orleans, Count, Pilot, Lord Denman, and Camillus. The second silver cup of 8*l.*, with a like inscription, was awarded to Mr. Thomas Allestree, of Draycott, Derbyshire, for Lord Milton, Lord Denman, Triomphe Royale, Duke of Devonshire, Gem, Comte de Vergennes, Captain White, David, Aglaia, Sovereign, Salvator Rosa, and Heroine. The third silver cup of 6*l.*, with a like inscription, was awarded to Mr. Charles Spencer, of Thulston, Derbyshire, for Sovereign, Captain White, Catafalque, Polyphemus, Victoria Regina, Lord Denman, Gem, La Bien Aimée, Heroine, Triomphe Royale, and Camillus.

CLASS B.—A silver cup, of 5*l.* value, the gift of S. R. P. Shilton, Esq., with the following inscription,—“Presented by S. R. P. Shilton, Esq., honorary secretary, to Wilson Marsden, for the best twelve dissimilar tulips, at the National Exhibition, held in Nottingham, 1853,” was awarded to Mr. Wilson Marsden, of Derby, for the Duke of Devonshire, Allen's Sarah Ann, Triomphe Royale, Earl Douglas, Lady Jane Grey, Queen of Violets, Lord Denman, Chellaston Seedling, Pilot, Catherine, Bagot, and Polyphemus. The second prize was awarded to the Rev. Samuel Creswell, for Bacchante, Sphinx, Crown Prince of the Netherlands, Sarah Ann, Polyphemus, Aglaia, Prince of Wales, Captain White, Camillus, Emily, Duke of Devonshire, and Lavinia. The third prize was awarded to Mr. Charles Turner, of Slough, for Pilot, Alexander Magnus, Princess Royal, Claudiana, Polyphemus, Magnificent, Captain White, Aglaia, Prince Albert, Heroine, Ving, and Van Amburgh. The fourth prize was awarded to Mr. Wm. Parkinson, of Derby, for Lord Milton, Camillus, Beauty of the Plain, Lady Camp, Aglaia, Alice Gray, Chellaston Seedling, Lady Stanley, Captain White, Charbonnier, Triomphe Royale, and Queen Charlotte.

The following flowers were considered the most superior ones exhibited:—Princess Royal, Queen Charlotte, Salvator Rosa, Lord Denman, Victoria Regina, Heroine, Duke of Devonshire, Rose-Emily, Claudiana, Captain White, Pilot, Clarissima, Lady Stanley, Polyphemus, Magnificent, Nymph, Earl of Richmond, Alexander Magnus, Buckley's Beauty, Camilla, General Barnevelt, Duc de Savoy, and Black Bagot. The Exhibition for 1854 is to be held in the Surrey Zoological Gardens, London.

CLASS C.—A silver cup, of the value of 5*l.*, the gift of the Nottingham Horticultural Society, with the following inscription,—“Presented by the Nottingham Horticultural Society to Mr. Thomas Houghton, for the best six tulips at the National Exhibition, held in Nottingham, May 25, 1853,” was awarded to Mr. Thomas Houghton, of Hemphill, Nottinghamshire, for Royal Sovereign, Captain White, Spencer's First-rate, Princess Royal, Heroine, and Aglaia. Second prize to Mr. Robert James Lawrence, of Hampton, Middlesex, for Pilot, Charles X., Brown's Salvator Rosa, Lawrence's Friend, Clarissima, and Aglaia. Third prize to Mr. Richard Clarkson, of Colwick, for Duke, Captain White, Bagot, Violet Wallers, Heroine, and Triomphe Royale. Fourth prize to Mr. John Edwards, of Holloway, London, for Royal Sovereign, Pilot, Addison, Queen Charlotte, Heroine, and Triomphe Royale. Five other prizes were given in this class.

CLASS E.—SINGLE SPECIMENS IN CLASSES.—*Feathered Bizarres*.—1, Sovereign, Mr. Joseph Godfrey; 2, Surpasse Optimus, Mr. William R. Lymbery; 3, Surpasse Catafalque, Mr. J. Clarke; 4, Catafalque, Mr. Thomas Gibson; 5, Magnum Bonum, Mr. John Spencer; 6, Grand Duke, Mr. Richard Clarkson; 7, Marius, Mr. William Scott; 8, Sphinx, Rev. S. Creswell. *Flamed Bizarres*.—1, Polyphemus, Mr. John Gibbons; 2, Captain White, Mr. Alexander Jackson; 3, Garrick, Mr. John Edwards; 4, Pilot, Mr. Charles Turner; 5, Augustus, Mr. Thomas Gibbons; 6, Lord Milton, Mr. Charles Spencer; 7, Charbonnier, Mr. William Parkinson; 8, Truth, Mr. John Gibbons.—*Feathered Byblamens*.—1, Lord Denman, Mr. George Hudson; 2, Bagot, Mr. William Harpham; 3, Lewold, Mr. John Edwards; 4, Britannia, Mr. Thomas Houghton; 5, Roscius, Mr. John Orchard; 6, Unknown, Mr. John Hedderly; 7, Midland Beauty, Mr. W. Parkinson; 8, Midland Beauty, Mr. Alfred Towle. *Flamed Byblamens*.—1, Alexander Magnus, Mr. C. Turner; 2, Lord Denman, Mr. Charles Spencer; 3, Violet Alexander, Mr. Thomas Gibbons; 4, Princess Royal, Mr. Thomas Gibbons; 5, Gibbons's Salvator Rosa, Mr. Joseph Lakin; 6, Queen Charlotte, Mr. Thomas Houghton; 7, Prince of Wales, Mr. John Spencer; 8, Othello, Mr. John Battersby. *Feathered Roses*.—1, Heroine, Mr. Thomas Gibson; 2, Comte de Vergennes, Mr. David Barber; 3, Nymph, Mr. John Spencer; 4, Aglaia, Mr. Thomas Gibson; 5, Lord Denman, Mr. George

Hudson; 6, Ponceau très Blanc, Mr. Charles Turner; 7, Seedling, Mr. John Spencer; 8, Fanny Cerito, Mr. Joseph Dakin. *Flamed Roses*.—1, Aglaia, Mr. Robert James Lawrence; 2, Camilla, Mr. John Batterby; 3, Triomphe Royale, Mr. John Edwards; 4, La Van Dieken, Rev. Samuel Cresswell; 5, Camillus, Mr. Alexander Jackson; 6, Triomphe Royale, Mr. George Hudson; 7, Seedling, Mr. John Spencer; 8, Lady Leicester, Mr. Thomas Gibbons.

CLASS F.—Seedlings that have never gained a prize before.—*Feathered Bizarre*, Earl Richmond, Mr. John Slater. *Feathered Rose*, Queen Victoria, Mr. Alexander Jackson. *Flamed Rose*, Lady Clifton, Mr. Alexander Jackson.

CLASS G.—SIX DISSIMILAR BREEDERS.—First prize to Mr. Turner, of Slough, for Pilot, Aide-de-Camp, Purple Perfection, Maid of Orleans, Lady Stanley, and Catherine. Second prize to Mr. Thomas Gibbons, for Pilot, Duke of Hamilton, Purple Perfection, Princess Royal, Surpasse le Grand, and Unknown. Third prize to Mr. John Batterby, for Gem, Sylph, Othello, No. 53, Sobraon, and No. 40.

ORNAMENTAL GOURDS.—Noticing that a correspondent requested a descriptive list of the Ornamental Gourds, &c., I here send the description of twenty kinds, which have been exhibited for some time in the window of Messrs. Charlwood and Cummins, Seeds-men, Covent Garden, London. All of them are pretty; some especially so, both in singularity of form and beauty in colour.

No. 1.—Cylinder-shaped, two feet long and nine inches in diameter; a deep orange colour.

No. 2.—Cylinder-shaped, about the same size as the above; a bright lemon colour.

No. 3.—Pear-shaped, one foot long; colour, a pale yellow mottled with green.

No. 4.—Bottle-shaped, ten inches long; a deep, rich, orange colour.

No. 5.—Pear-shaped, two feet long and, at the thick end, one foot in diameter; colour, a light green, with stripes of dark green.

No. 6.—Turban (Turk's cap) shaped, nine inches long; colour, a rich orange, mottled with deep green.

No. 7.—Turban-shaped, eight inches long; white, beautifully mottled with green.

No. 8.—Cylinder-shaped, eighteen inches long and five in diameter.

No. 9.—Turban-shaped, nine inches long; white, with numerous ribs.

No. 10.—Orange-shaped; very large, and a rich deep-orange colour.

No. 11.—Pear-shaped, eight inches long and four in diameter at the thick end; colour, a deep orange, and is beautifully ornamented with a warted, irregular surface.

No. 12.—Bottled-shaped, eighteen inches long; of a deep-green colour.

No. 13.—Bottled-shaped, nine inches long, the surface beautifully warted; colour, a deep orange.

No. 14.—Oval-shaped, eighteen inches long, and ten in diameter at the middle; green-striped and marbled with yellow.

No. 15.—Oval-shaped, and of similar size to No. 14; colour, green-striped and marbled with white.

No. 16.—Orange Gourd. This is the small sized, being the size of an orange, and a rich orange-yellow colour.

No. 17.—Snake Gourd. It is very like a snake in form, growing from three to four feet long; a bluish-green, streaked, marbled with white and cream colour.

No. 18.—Hercules'-club Gourd. It grows from three to four feet long; an olive-green and cream colour. The form is, that it thickens gradually from the stalk to the end.

No. 19.—Turban-shaped, eight inches across; white, *not ribbed*, as is No. 9.

No. 20.—Mammoth Gourd. It often grows to the weight of from six to ten stones; colour, a deep yellow.

No. 21.—Babcock's striped. Globe-shaped, five inches in diameter; colour, creamy-white, striped with orange.

No. 22.—Crooked-necked Squash-Gourd. Rather bottle-shaped, eight inches long, with the stalk-end curved; a deep orange colour. The plant bears abundantly as a dwarfish bush.

No. 23.—Victoria Gourd. Globe-shaped, twelve inches in diameter; ground colour, yellow, beautifully marbled and ribboned with deep orange; very handsome.

Most of the above can be trained to larch poles, which have several inches of each branch left, on to which the shoots will cling, and the fruit be supported by; thus grown, they have a pretty appearance in the flower-garden or other situation. A large hole should be made and filled up with equal parts of well-rotted manure and good lightish loam. If

the substrata is not stone or gravel, then put in six inches of broken stone, &c., to make a good drainage. The plants will require to be watered liberally, according to size, using pond or rain-water and liquid manure alternately.

DOUBLE ANEMONES.—The soil for these should be a friable loam, in which gritty particles abound. Decayed turves form an excellent basis for compost. The manure to be added should be vegetable, in preference to animal, and be incorporated with the soil rather than deposited in a layer below the tubers. There are two seasons for planting, namely, the middle of October and the end of January. The early vegetation of such roots as are left in the ground would intimate that the former is the most natural season, and undoubtedly October planted tubers make stronger plants, throw up more flower-buds, flower earlier, and when the season is favourable, mature finer blossoms than those planted in spring. The main drawback is, that the blossoms expand before frosts have ceased, and hence a larger amount of care and protection is requisite. A bed planted the first week in October, 1849, was in beautiful bloom the 12th of May, 1850; and on the 16th of that month the thermometer, only a few yards distant, registered 25°, which would have ruined the blossoms had they not been sheltered. Make a bed of your prepared compost in a sheltered spot in the garden, where the subsoil is pretty well drained. Three feet four inches will be found a convenient width, and at least 15 inches in depth. Protect it from heavy rains, so that it be tolerably dry when required for planting. Rake the surface level, and mark the bed in cross rows. Plant five roots in a row, which will allow 6 or 7 inches apart. As the tubers are varied in form and size, the hand or a trowel should be used to make the holes, 2 inches deep, and large enough to admit the root to rest evenly on the soil, avoiding much pressure, as the limbs of the tubers are often slenderly attached to the crown, and are easily broken off. Strew over the surface of the bed 2 inches of half-decayed leaves, for a protection against frost; but as the plants come up, attention must be given to liberate the rising foliage; the decaying leaves matted together by rains will sometimes obstruct and injure it. As the leaves and flower-stems protrude through the ground in a double or folded form, they disturb the soil, and the surface around the plants should be eased, broken fine, or pressed, as may appear needful. Should the protecting materials be thought untidy, as the spring advances, they may be carefully drawn off, and a top dressing of short decomposed stable dung and leaf-mould applied, which will be useful in nourishing and sustaining the plants.—*Extract from Mr. CAREY TYSO's Treatise on Culture of Anemones.*

TALL CLASS OF LOBELIAS.—In consequence of a descriptive list of these fine, showy, flowering plants being given in this Magazine, I procured a dozen kinds last spring, and had them planted in a circular bed at the centre of a small garden, the tallest in the middle, and gradually declining to the outer row with the lowest. The bed contained forty-six plants. They were planted in a compost of equal parts of good loam, peat, and well-rotted dung from a mixture of horse and cow manure. The centre-plants are five feet high, and the others in proportion; the outer-row of the blue-flowered are about a foot high, and the whole has been in profuse and splendid bloom since the middle of June up to the present time, October 15th. I gave most liberal watering of liquid manure and pond-water alternately.—**CLERICUS.**

NEW VARIEGATED DAHLIA, EMPEROR FRANCIS JOSEPH.—This singularly handsome Dahlia has been raised near Vienna, in Austria. The *entire* foliage is variegated; *green and pure white*. It retains its constancy, and has not borne a single *self-coloured* leaf. The flowers are double, of a rich red colour. Plants may be obtained next spring in London. Also the new—

PETUNIA STRIATA FORMOSISSIMA.—A most striking variety; each plant produces flowers that are lilac, white, deep rose margined with white, and white edged with rose. It is very neat.

VARIEGATED LEAVES.—If variegation proceeds from a disease in the plants, as is asserted by some persons, the following account of a variegated Holly shows that some plants fatten pretty well in their illness. I cannot ascertain the age of the tree, but the circumference of the stem, one foot from the ground, is 5 feet 6 inches; and six feet from the ground, 4 feet 10 inches: diameter of the branches, 30 feet; and height of the tree, 35 feet. It would have been larger if it had got fair play, but it is much injured by its neighbours, which are two large trees, namely, an ash and an elm.—*P. Mackenzie.*



Rhododendron Edgeworthii.



ILLUSTRATIONS.

RHODODENDRON EDGORTHII.

THIS very noble Rhododendron is one of the many valuable acquisitions which Dr. Hooker discovered upon the Himalayan Mountains, and recently introduced into England. It is of medium size, with fine large, leathery leaves, and often grows (as Orchideous plants do) as an Epiphyte, hanging pendulous from other trees or rocks. The flowers are of an extraordinary size, produced in clusters of two or three together, and, blooming freely, renders it highly ornamental. It merits a place in every garden establishment, and plants may now be obtained at a very reasonable cost. It would be a charming acquisition suspended in a greenhouse or conservatory, or upon a rockwork in the open air :

" Oh, who that loves with curious eye to trace
 Nature's least beauty, or most transient grace,
 Can walk the shrubb'ry's cultivated ground
 At morn, when flowers their fragrance breathe around,
 Nor feel as he inhales the balmy air
 His genius and his taste grow more refined,
 And Fancy's vista open on his mind."

NOTES ON NEW OR RARE PLANTS.

BEGONIA BISERRATA.—It is said to have been discovered in Guatemala, by Mr. Skinner, and it has blossomed in the stove in the Royal Gardens at Kew, a plant having been received there from W. W. Saunders, Esq. It blooms very freely during the whole summer season in the stove, and has a handsome appearance. The plant grows from two feet to three feet high, branching, and the flowers are produced in cymose panicles. Each blossom is $1\frac{1}{2}$ inches across, white and rose. All the Begonias increase readily by cuttings, or division of ground side-shoots; and to keep a stock of healthy blooming plants, a young stock must be provided every year.—Figured in *Botanical Magazine*, 4746.

CAMPANULA VIDALLII.—In a previous volume we figured this handsome species, as well as subsequently remarked upon it. A fine figure is given in last month's *Botanical Magazine*. It is a native of the Azores, and was discovered by Captain Vidall, on an insulated rock on the east coast of Flores. The plant is of a shrubby character, having a single main stem, from nine inches to half a yard high, and produces numerous branches, springing from the summit, or nearly so, regularly disposed around, and the ends ere long rise upwards, each terminating in a long and erect raceme of from six to ten large bell-shaped, drooping, *waxy-white*, handsome flowers. Each blossom is two inches long and one across. It proves to be quite hardy; but at the same time flourishes in a frame, or greenhouse, and certainly ought to have a place in every establishment of pretty flowering plants.

DICTYANTHUS PAVONII.—It belongs to the natural order Asclepiadæ, a native of New Spain, where it was discovered by Pavon; and in his manuscripts it is described under the name of *Stapelia campanulata*, in consequence, we suppose, of its flowers so much resembling those of some of the *Stapelias*. It is a climbing plant, with foliage like the *Convolvulus major*. Each blossom is about two inches across, spreading bell-shaped, with a fine angled termination, of a pale green, beautifully striped and cross veined, so as to have a handsome network appearance. It is a singular, pretty climbing stove plant.—Figured in *Botanical Magazine*, 4750.

METTERNICHIA PRINCIPIS (Synonyme, *Lisianthus ophiorrhiza*).—It is a stove shrub, a native of Brazil, where it attains the height of twenty-five feet. The plant, however, is readily kept a low bush, and blooms freely. The flowers are in form like those of *Convolvulus minor*; but the edge of the blossom is irregularly indented, white, with a greenish tube. The leaves are oval-shaped, three inches long and one broad, leathery. It is in the stove at Kew Gardens.—Figured in *Botanical Magazine*, 4747.

PAPAVR PILOSUM. *Large hairy Poppy* (Synonyme, *Papaver Olympicum*).—A hardy herbaceous Poppy, having perennial roots. The flower stems rise to about two feet and a half high. Each blossom is four inches across, of a bright brick-red colour, each petal having a white spot at the base, giving to the flower a white eye. It is a very

pretty hardy perennial, growing compact, and very showy when in bloom. In the flower-garden at Kew, it was much admired the past summer.—Figured in *Botanical Magazine*, 4749.

PLUMIERII JAMESONII, belonging to the natural order Apocynaceæ, which includes the Allamanda, Echites, Nerium, &c.—It is a native of Guayaquil, in South America. The plant in the stove in the Royal Gardens at Kew is four feet high, the stem and branches woody. Each leaf is a foot long and four broad at the widest part. The flowers are produced in terminal cymes, each having from ten to fifteen blossoms, and each blossom, of five spreading petals, is nearly three inches across, of a rich yellow colour. The principal flower-stem, as well as the lesser ones immediately adjoined to the flower, is of a rich red colour, and has a very fine appearance.—Figured in *Botanical Magazine*, 4751.

CERCIS JAPONICA.—Most of our readers know the handsome flowering Judas-tree (*Cercis siliquastrum*) of our pleasure-grounds; the present species resembles it in the general appearance of the plant; but it is a more *profuse* bloomer, and the flowers of a much more brilliant rosy-red colour, and continue in bloom to a much later period of the season. The blossoms are belonging to what is termed the pea-formed order. The leaves are thick, and much more leathery than those of our common Judas-tree. It is in Mr. L. Van Houtte's Nursery establishment, and merits a place in every pleasure-ground or border of shrubs.—Figured in Van Houtte's *Flore des Serres*.

CHEIRANTHERA LINEARIS.—This beautiful flowering half-shrubby plant is a native of New Holland, and ranks among the Sollyas, Billardieras, &c. It has a neat, delicate, lavender-like foliage, with large fine-petalled blossoms, each being two inches across, of a bright blue colour, produced in terminal heads. It will be one of the prettiest ornaments for the greenhouse, and merits a place in every one.

DRACÆNA NOBILIS.—A most charming plant for the stove, or warm greenhouse. The very large broad leaves are disposed in terminal large heads, like *plumes* of ostrich feathers, striped with bright green and carmine.

ECHITES HARRISONII.—A beautiful stove-climber, of good stiff growing. The flowers are of a beautiful rose, with a yellow tube and throat, and are borne in profusion. It is an admirable plant for *pot-training* round a wire framework, and ought to be in every stove.

VELLOZIA ABIETINA, **V. CANDIDA**, and **V. SPECIOSA**.—These are superb plants, from Brazil, having foliage much like the Pandanus, and flowers of the form of the Hemerocallis (Day Lily). A fourth exists, but no name is given by Mr. Van Houtte. Their colours, however, are beautiful blue, rich carmine, bright yellow, and pure white. They are most valuable acquisitions. Mr. L. V. Houtte offers three sorts for 1,000 francs.

BORONIA DRUMMONDII.—The foliage is very delicate and beautiful. The flowers of a rosy-scarlet. It is the handsomest of the genus.

GENETHYLLIS TULIPIFERA.—A most charming plant, being much like a *Diosma*, and the flowers are in form and size similar to a Tulip,

and in colours like a Paroquet Tulip. Very ornamental for the greenhouse.

ESTERHAZYA SPLENDIDA.—It has the appearance of a magnificent shrubby Pentstemon, bearing a profusion of orange-coloured flowers, in long spikes. It flourishes in the greenhouse, and in the open air in summer.

CENTAUREA DEPRESSA.—A beautiful hardy annual, which grows about eighteen inches high. The flowers are produced in profusion, blue with a red centre.

SANTOLINA VIRIDA.—A neat, hardy, herbaceous plant, two feet high, blooms profusely, and each flower is an inch across, of a yellow-green; neat and pretty.

PELARGONIUM KING RUFUS.—This is a charming bedding variety, probably a seedling of the Diadematum section. The flowers are scarlet, and produced in profusion, each blossom two inches across. The plant is a foot high, bushy.

TACSONIA IGNEA.—A native of Peru. The flowers are of a brilliant fiery-red colour, very showy. It is a valuable acquisition to our greenhouse climbers.

SPIRÆA REEVESIANA FLORE PLENO.—The flowers are a full double, white. A hardy shrub, meriting a place in every shrubbery.

SCIADOCALYX WARSCEWICZII.—It belongs to the *Gesnerads*, bears a large umbel of flowers, of a beautiful red, and the yellow throat spotted with purple. Very handsome.

CLEMATIS PATENS (or *azurea*) *var. SOPHIA* (Synonyme *C. cœrulea var. Sophia*).—This variety has flowers of similar size to those of *C. cœrulea grandiflora*, nearly six inches across. Each blossom has eight petals, blue, with a broad green stripe up the centre. It is very pretty, and as hardy as the original species.—Figured in Van Houtte's *Flore*, 852.

CAMELLIA ARCHDUCHESS MARIE.—The flower is large, perfectly imbricated, fine outline, and deep. It is of a rich cherry colour, and each petal has a white stripe up the centre.

DIERVILLA AMABILIS (Synonyme, *Weigelia amabilis*).—This fine species is a more robust shrub than the *Weigelia rosea*, blooming in greater profusion. The flowers are of similar form, but larger, and of a brighter rosy-carmine colour. It is quite as hardy as the other species, and ought to be in every shrubbery. It is an excellent plant, too, to force for winter bloom.

1. The old, hardy, branching, tall shrub of our pleasure-grounds, hitherto known as *Lonicera Diervilla*, and *Diervilla lutea*, is in future to be called *Diervilla Canadensis*. Its flowers are small, of a greenish-yellow.

2. The one hitherto known as *Diervilla versicolor*, *Weigelia Japonica*, and *Weigelia rosea*, to be called *Diervilla Japonica*.

3. *Weigelia amabilis* to be *Diervilla amabilis*.

4. *Weigelia Middendorffiana* to be *Diervilla Middendorffiana*. The flowers are produced at the axils of the leaves, in clusters of three or four together, similar to the *D. rosea*, of a sulphur-yellow colour.

The following are not yet introduced into our own country :

5. *D. floribunda*.—A large-growing, branching shrub. The flowers are produced on the side-shoots, in terminal corymbose-like heads, funnel-shaped, having five divided; margin, purple. It inhabits the mountains of Japan, blooming very profusely, producing a fine appearance.

5. *D. hortensis*.—A vigorous-growing, branching shrub, a native of China. Flowers tubular, funnel-shaped, red or white, being variable, and produces a fine effect.

7. *D. grandiflora* (Synonyme, *Weigelia corænsis*).—A tall, branching shrub. The flowers are produced in terminal branchy heads, tube-shaped, of a rich rose colour, very handsome. A native of Japan.

8. *D. florida*.—Grows in the valleys in Northern China. It is a tall, branching shrub. The flowers are produced singly, funnel-shaped, of a purple colour; but often are of various colours. It is exceedingly ornamental.

Cissus heterophylla FOL. VARIEGATA.—A climbing-plant, with smallish foliage, in form of those of the Vine, beautifully variegated with white and green, and the stems are tinged with red. It is of medium growth, and a beautiful plant to train round a wire framework, or up a pillar in the greenhouse.

PERENNIAL DELPHINIUMS, AND THEIR VARIETIES.

BY MR. JOHN BURLEY, OF ACACIA NURSERY, ST. JOHN'S WOOD, LONDON.

THIS charming herbaceous plant, with its numerous varieties, now amounting to about sixty named kinds, is one of the best that can be used for beautifying the flower-garden; the length of time they are in bloom, combined with their varied and brilliant colours, makes them very desirable. The dwarf varieties, when grown in a bed, have the best possible effect, and when mixed with other plants in the beds or borders, they have a very interesting appearance. The taller perennial varieties grow from six to eight or nine feet in height, and are very suitable for planting at the back part of a border bounding a flower-garden. They thrive and flower well in any rich mould. The varieties which are best suited for bedding are—

HENDERSONII, colour, deep azure blue, with a white eye, growing from two to three feet high. It may be regarded as the prettiest of the tribe yet in cultivation, and flowers from June to October very profusely. If planted about twenty inches apart, they will, in the season, spread and form one mass of their beautiful bloom.

QUADRICOLOR is another dwarf variety, the flower being, as its name implies, a mixture of colours, viz., a light blue, lavender, and a shading of light rose; it is a free-blooming, fine variety for bedding. Its height is from one to two feet.

WHEELERI is a beautiful light blue, free-blooming and handsome. It is a medium-sized, double variety, of the *bee* kind.

AZUREA GRANDIFLORA is another light blue Delphinium of the *bee* kind; it flowers very freely, and has a nice effect.

GRANDIFLORA MAXIMA is a dark blue; a large flowering variety, suitable for borders.

BEAUTY OF CHARDONNE is a good flower, resembling *Hendersonii*, but the flower is smaller, and its habit is not so free-flowering.

MAGNIFICUM, a capital variety for a bed; colour azure blue, with a light eye; habit free-blooming, with medium-sized flowers; grows from two to three feet high.

AZUREUM PLENUM, a pretty, light blue, double flower, and a free bloomer.

BARLOWII is a double flower, of a dark blue colour; a good, free-blooming variety for the border.

In addition to the above there is a great variety of the tall-growing section, which deserve attention; they should be grown in every garden, however small. They are easily increased by division of the roots. When a plant attains a large size, it may be taken up, parted, and replanted immediately, or kept in pots in a cool frame during winter, and turned out into the borders or beds where they are to flower the ensuing season. A circular bed, with the tallest growing in the centre, and gradually declining to the dwarfest, for the outer row has a singularly pretty appearance, and will be ornamental throughout the summer.

THE PASSIFLORAS.

BY A NOBLEMAN'S GARDENER, IN STAFFORDSHIRE.

THE Passion Flower ranks among the most interesting flowers, and is certainly deserving a notice, as well, too, for its great beauty and for its docility in cultivation. This genus, in my opinion, offers very great inducement to the experimental cultivator, from the facility with which hybrids may be obtained from it a subject; of the greatest interest to us, and one which I think well deserving the attention of every gardener. We are all well acquainted with the vast improvements that have been made in the class of flowers denominated florists' flowers; and reasoning from analogy, why should not the same or similar improvements be extended to other plants and flowers with as great success as has attended the trial with those. Keeping this in mind, I intend from time to time, as opportunity may occur, to present to the notice of the readers such plants or families of plants as may appear to offer the most reasonable chances of success; and with this view I begin this article on the Passion Flower.

It has already been made to produce several hybrids of the greatest beauty, well repaying the trifling trouble occasioned. Much, very much, may yet be done with this genus, not only in the improvement of the flowers, but also towards acclimatizing some of the best varieties. It is the type of the natural order Passifloræ in the Jussiean system, and it is placed in the class Monodelphia, order Pentandria, of that of Linneus; it is so called on account of its being supposed to represent in the appendages of the flower the passion of the Saviour. The genus consists entirely of climbers; some species are odoriferous, others

bear edible fruits, and all of them very handsome. I shall here mention a few of the most prominent; first remarking that, with only three or four exceptions, they are all equally suitable ornaments either of the conservatory or of the stove, that is when grown solely as ornaments; but when grown for the fruit, which of many of the species is very delicious, or for the purpose of hybridizing, a stove or very warm greenhouse is necessary. Most probably the latter would be found to answer, as they bloom at a season when the greater number of plants are removed to other situations, and so would allow of keeping the house warmer than is ordinarily done.

The soil they most delight in is a good sound turfy loam a year old, enriched with well-rotted hotbed dung, and a sprinkle of white sand; but must not be allowed to grow too luxuriantly, if seed is an object sought; they may be grown in very large pots or tubs, though to plant them in the border of the house is by far the most preferable method. The plants should be occasionally syringed during the growing season to remove dust and prevent the approach of red spider, though they are but little subject to the attacks of any insect if kept in anything like a healthy state. The hardier species are those we should choose for the purpose of impregnation, as likely to impart a hardy constitution to the hybrid; they are:

P. cœrulea; *P. angustifolia*; and *P. chinensis*.

Of the other and more tender species the *finest* are:

<i>P. amabilis</i> , brilliant scarlet.	<i>P. racemosa</i> , red.
<i>coccinia</i> , scarlet.	<i>Kermesina</i> major, blue, red, and green.
<i>cuprea</i> , orange.	<i>picturata</i> , purple.
<i>maliformis</i> , red, white, and blue.	<i>serratifolia</i> , pink and green.
<i>alata</i> , blue, red, and green.	<i>cœrulea racemosa</i> , blue and red, and purple.
<i>Loudonia</i> , red and purple.	<i>edulis</i> , white.
<i>incarnata</i> , rose and pink.	<i>Decaisneana</i> , crimson, blue, white, and red.
<i>laurifolia</i> , red and purple.	<i>phœnicea</i> , crimson.
<i>cœrulea grandiflora</i> , blue, red, and white.	
<i>quadrangularis</i> , red, white, and green.	

There are many others, but this selection will suffice for either ornament or improvement. *P. cœrulea racemosa* is an hybrid, raised by Mr. Milne, of Fulham, and was a beautiful acquisition at that time; it is well suited for a greenhouse climber, and will in some places stand the severity of our winters in the open air. *Alata cœrulea* is another hybrid of great beauty, obtained by Mr. Masters, of Canterbury, from seed of *P. alata* of the West Indies, impregnated with *P. cœrulea*. Now though an hybrid obtained from a cross between a hardy species and one that is tender does not appear to be strong enough to withstand our winters in every open-air situation, yet there seems to be every probability of a successful issue if the hybrid so obtained was again crossed with a hardy species. That those hybrids will seed we have had proof, and we know a successful attempt has been made with a similar cross in the case of the *Rhododendron*; there, after several trials with crosses from arborea and hardy species, none would stand the

winter till those hybrids were again impregnated with hardy kinds, it seeming to require two removes from the tender parent before the robust constitution required could be obtained. Such I imagine to be the case with passion flowers; but independent of this increase of outdoor varieties, which we consider to be the most desirable point, from their peculiar adaptation for the covering of arbours, walls, and other ornamental spots, and from the great addition that would then be made to the enjoyment of their beauty and fragrance; yet independent even of this, much may be done among those which are and would still continue to be tender. I am aware that several fine varieties have recently been raised on the Continent, and having most beautiful distinct flowers, encourages me in soliciting my floral friends, in my own country, to equal exertions, well assured such will be amply repaid; and how pleasant and interesting it is to watch the process, and finally behold the beautiful reward! I certainly think no collection is complete that does not contain two or three species at least, though I would not have more than ONE OF A SORT in either stove or greenhouse; there is always some spot that may be found to which they will contribute a great share of beauty.

Having mentioned raising them from seed, it will be expected that I state the mode of doing so; it is this:—When the fruit is ripe, the seeds should be taken from the pulp and dried in a piece of soft paper; if there is a stove in the establishment they may be sown directly, but if no place of the kind is at hand to keep them in through the winter, it will be better to defer the sowing till the following March; then sow in deep pans, using a light though rich loam to sow in, place the pans in a pit or frame with a medium heat, say about 65 degrees, give them a gentle watering when first placed there, and repeat it when necessary; but they will not require any till they appear above ground; air must be given to prevent them drawing up weakly, and when about two inches high remove them to a warm shelf, near the glass in the greenhouse; let them remain here till June, when they may be placed in the open air; let them remain out till the plants are housed for the winter, observing to keep them moist; when taken into the house again they should be potted off if they seem to require it, but if they are not too thick they had better remain undisturbed till the spring, when they may be potted into large pots or turned into the borders of the house. I should not advise placing any of them permanently in the open air till they have bloomed, or, indeed, till there were duplicates of any that might appear to possess desirable qualities.

Several species are well worth cultivating for their fruit; the first of these eatable sorts is *P. maliformis*. The fruit of this is about the size of an apple, of a yellowish colour when ripe, and contains a very sweet pulp, which is the eatable part in all of them. This is the *Granadilla* of the West Indies; when grown for fruiting, it should be planted in the border of a stove, and trained upon a trellis near the glass: a good crop may be expected the second season after planting.

P. quadrangularis is a very free fruiting kind; the fruit is pale green, when ripe is larger than that of *maliformis*; the flavour of it is luscious and gratefully acid. It should be planted like the other in

the border of a stove, and trained on a trellis, or against the back wall, and should be freely pruned, as from its luxuriant growth and the size of the leaves some difficulty is sometimes experienced in ripening the fruit; we have succeeded in obtaining fruit from plants grown in pots, though the quantity is necessarily less.

P. laurifolia is rather more difficult to fruit; but when in a favourable situation the fruit is very fine: it is about the size of an egg, yellow when ripe, and when fit for gathering is dotted over with small white spots; the flavour is peculiarly aromatic, with a very pleasant acid; it should be grown close to the glass, and the warmest part of the stove allotted to it.

P. edulis is much easier to fruit than either of the foregoing; it will succeed when planted against the back wall of a warm greenhouse, and with very moderate attention produce a plentiful crop of very fine flavoured fruit. It should be kept moderately thin, but yet does not require so much pruning as some of the other species. The flowering of all the species commences in May and continues till September, the fruit setting the whole time; this may be assisted by applying the pollen to the stigma with a feather, and thus ensuring a crop.

P. incarnata may be fruited in a stove with great ease; the fruit when ripe is of an orange colour, the pulp or juice is yellow, and very sweet. The seedlings of this species produce fruit the first season, which would make it a desirable kind for the purpose proposed in the beginning of this article.

The winter treatment of these plants is nearly the same: let them be grown for what purpose they may, the heat applied should be lowered sufficiently, and a proportionate decrease in water, so that the soil should be barely moist, in order to stay the growth, and give the plants about a ten weeks' rest, when the plants should be *closely pruned*, and they will be found to produce finer shoots, and more freely from the old wood than from that which is one or even two years old. They should be kept dormant till the beginning of March. In conclusion, I may remark that to those who are fond of rare fruits for the dessert, this genus will be found useful, as, in our opinion, if allowed the end of a low house, and trained cross-ways of the roof, an abundant supply of fruit will always be ensured; this is certain to be the case with *edulis*, *alata*, and *alata superba*; and when in full fruit are most interestingly ornamental, with their hundreds of green and purple fruit. Small plants trained round a wire circular framework bear numerous, and are very pretty. I have seen *plants* in full fruit placed on the table with the rest of the dessert, and the ripe fruit plucked and eaten on those occasions.

THE BOTANICAL RAMBLES OF A BRITISH BOTANIST, DURING A SOJOURN IN NORTH AMERICA.

BY AMICUS, OF NOTTINGHAM.

PERHAPS it will be interesting to some of the numerous readers of your very useful Magazine to have some particular descriptions of a

few of the best wild plants of North America, with remarks on the situation and soil they grow in. I have therefore much pleasure in forwarding a detail of Botanical Rambles during my sojourn in that country; and I hope it will not only be interesting, but likewise of practical utility.

I first saw *Justicia pedunculata*, growing in abundance in the ponds and swamps of the Island of Montreal. It is a very pretty aquatic; the flowers are of a lilac colour, and borne in profusion. *Monarda didyma* (or Kalmiana) grows plentifully in the northern part of the States of New York and Pennsylvania, in a rich moist soil, and forms a splendid plant, its rich scarlet heads of tube-shaped flowers being very showy. It deserves a place in every garden. Another scarce plant is the *Monarda punctata*, which grows in the dry sandy fields of New Jersey. I have never seen it in cultivation; but its yellow and brown blossoms are very interesting and pretty. *Monarda hirsuta* grows in moist, rich, shady woods in Pennsylvania, near to Lake Erie. The flowers are purple, but it is not of much interest. The first and most handsome of the *Monardas* is *M. Russelliana*, which grows in the sandy beach of the Red River in Arkansas; the flowers are white, and have a chaste, elegant appearance. Perhaps these remarks may come under the notice of some person who is fortunate enough to possess it; and if the individual would oblige me by giving the Editor his or her address, I should be glad either to exchange some other rare plant for one of it, or purchase one. Here is the *Euphorbia Ipecacuanha*, common in the sandy fields of New Jersey, sometimes buried in the sand. The roots run a great depth, and are said to be of equal quality to the true *Ipecacuanha*. *Iris cristata*, too, grows luxuriantly in the dry woods of Ohio; its flowers are of a pretty pale blue. The *Iris tridentata*, in the Island of Anticosti, flowers deep blue; and the *Iris prismatica*, in the sphagnum swamps of New Jersey, at the Quakers' Bridge; and the *Dilatis tinctoria*, with its pretty pink flowers, is a companion to it in the swamps. The glittering *Hetranthera graminea*, with its pretty blue flowers, grows profusely in the town of Montreal. Between Queenstown and the Falls of Niagara, I saw *Lichea minor* in dry sandy woods, having pretty white flowers. *Swertia deflexa* grows among rocks, in the woods at the Bay of Gaspé; it belongs to the order of Gentians. The *Frasera Walterii* belongs to the same natural order, with green and yellow blossoms. I saw it in the oak woods of Ohio, near Lake Erie, growing in a strong clayey soil. *Mitchella repens*, too, a pretty alpine, was frequently seen growing at the roots of pine-trees and in dry vegetable mould and sand. The *Houstonia cœrulea*, in large patches of beautiful blue flowers, often gratified my sight, growing very freely in moist soil, at Halifax and other places; and *Houstonia purpurea*, not quite so showy as the previous species, but pretty, in dry sandy woods at the Bay of Quinte, in North Carolina. *Ilex Canadense*, a neat holly at Montreal. In dry sandy woods, near York, in North Carolina, I perceived *Batschia Gmelina*: it is a pretty plant, belonging to the Boraginacea order, bearing neat yellow flowers. While at Montreal I saw the *Cynoglossum amplexicaule*, also of the Borage order, having

blue flowers, in dry rich soil on limestone rocks. The *Primula pusilla*, having pretty purple blossoms, was growing freely in vegetable mould and sand, which had too a mixture of gravel in it, at the edge of the St. Lawrence river, opposite Quebec. It sends out runners under ground, by which young plants are produced. I may next state that the *Xylosteum ciliata* grows in rich moist soil in shady woods about Montreal; also *Xylosteum oblongifolia* (belonging to the Honeysuckles), in a swamp at the same neighbourhood. The former has greenish-yellow flowers, and the latter are white, but neither of them of much beauty. Likewise *Triosteum perfoliata*, of the Honeysuckle order, dark-red blossoms, in dry soil on limestone rocks about Montreal. *Suonymus obovata* (Spindle tree), pink-coloured flowers, grows vigorous in vegetable mould in thick shady woods on the south side of Lake Erie.

I observed in New Jersey that the *Viola pedata* grew in the greatest perfection in dry sandy soil, its profusion of blue blossoms being very showy. *Viola lanceolata*, too, in moist soils about Halifax; and *Viola primulæfolia* in very dry sandy soils about Halifax and Lake Simcoe: the flowers are a pale-blue, and the plant is quite ornamental. The *V. blanda*, with its showy white flowers, is much more beautiful. Here the very pretty *Claytonia Carolinæana* grows luxuriantly in vegetable mould about Montreal. It belongs to the Portulacæa order, and the blossoms are of a pink colour. *Asclepias verticillata* grows about Niagara, in dry arid soils, its flowers being white and green; and *A. tuberosa* is one of those splendid plants which adorn the fields about the mighty falls of Niagara; but to grow it to its highest perfection it requires a dry sandy soil and warm situation; flowers of a bright-orange colour. The splendid *Gentiana crinita*, with its rich blue flowers, grows in moist vegetable soil on the Table Rock, Niagara. Another superb plant is the *Gentiana saponaria*; its blue flowers are very showy. It grows on the edges of woods about Montreal, and is most luxuriant when growing in leaf-mould, rotten sticks, and sandy loam. I must mention, too, the *Gentiana angustifolia*, a fine low-growing species, with blue flowers; it flourishes in swamps in New Jersey. *Gentiana ochroleuca*, and *G. amarella*, both bearing purple flowers, grow in dry soils; the former in Ohio, and the latter near Lake Simcoe. There is a celebrated plant which is particularly deserving notice; it is the *Panax quinquefolia*, the root of which is the *Ginseng* of the shops; the flowers are of a light yellow. Also the *Panax trifolia*, with green flowers, grows luxuriantly in shady woods about Montreal. Here, too, grows the curious *Parnassia carolina*, bearing white flowers (of the Saxifrage order), flourishing on the edges of swamps about Montreal. The singular *Drosera filiformis* (Sundew), and the curious *Cynostilis Americana*, in swamps in New Jersey. The *Lilium Philadelphicum*, with scarlet flowers, in dry sandy soil about Montreal. *Uvularia grandiflora*, having purple flowers, in rich shady woods; and *Helonius asphodelioides*, in sandy pine woods in New Jersey. *Trillium pictum*, flowers red and white; *T. erectum*, flowers brown; and *T. grandiflorum*, flowers white. The first grows in dry mould on sand, and the two others in rich mould. *Epigæa repens*, in

mould and sand, as other heath-like plants do; its pretty white flowers are much admired. *Pyrola asarifolia*, flowers green and yellow; and *P. uniflora*, white flowers; grow in shady sphagnum swamps. *P. maculata*, white flowers; and *P. umbellata*, pink flowers, in dry vegetable soil. We now come to *Silene regia*, and truly it is *Regia* (Royal) to all who see its large masses of crimson flowers. It flourishes in a dryish stiff loam, and rather shady situation. The *Verbena striata*, with pretty blue flowers, requires a sandy soil.

Bartisia (now *Euchromea*) *coccinea*.—Its scarlet and yellow heads of flowers are very showy. It grows in fields and sandy woods. *Lobelia cardinalis* grows fine in moist shady places and swamps. *Petalostemum violaceum*, of the Pea-flowered order, a very pretty herbaceous perennial, bearing violet-coloured flowers; grows in dry sandy loam. *Eupatyrum caelestinum*, is a fine species, bearing a profusion of blue flowers; it grows in rich alluvial soil. The finest *Aster* I saw was, *A. concolor*, bearing large purple flowers, growing in dry sandy woods; in New Jersey. *Cristaria coccinea*, belongs to the Mallow order, bearing scarlet blossoms, very showy, and adorns the vast plains of Missouri. I cannot omit the *Oenothera speciosa*; it is a most charming plant, its numerous large white flowers are very pretty. Why is it not more cultivated? It should be in every garden. *Pentstemon Bradburii* is as fine as any; flowers large, and of various colours: *P. Murrayanum* looks, by far, the finest species. I mean in Texas, where it makes a splendid appearance, growing six or seven feet high, having about thirty lateral floral branches, in addition to the long centre spike, and each has from four to eighteen blossoms, of an orange-scarlet colour. It flourishes in rich, sandy loam. The *P. cobaea*, bearing large blue and white flowers, grows fine in a calcareous soil. The following flourish in many places: *P. glabra* is a fine one, bearing dark purple flowers. So is *P. erianthera*, with large purple blossoms, for the size of the plant; and *P. gracilis* is beautiful, with a profusion of blue flowers. The *Lupinus villosus* is by far the finest I saw, having long spikes of pinky-red or crimson flowers; but it is shy of cultivation. There are several splendid *Rhexias*, well worth introducing as garden-ornaments, belonging to the Melastoma order, having flowers of blue, white, purple, &c.

Of late there have been but few plants introduced from America. Why is it that we have not a collector of plants there, when there are from other countries? I am confident that no country can boast of finer ornaments than those that are in America (vast numbers of which have not been introduced into Great Britain); my own observations whilst there fully assure me of the fact.

I hope the extract here given, from remarks made during my numerous excursions, will not only be interesting, but *useful*, inasmuch as the particular *soil* and *situation* the plants flourish in I noted down at the time I saw them, and which may serve as a guide to those who possess such kinds of plants as above noticed, to cultivate them so as to be successful in blooming them satisfactorily. I purpose continuing the subject in future Numbers, should this communication be approved. At all events, I hope it will tend to encourage a much more extensive cultivation of this class of hardy plants in my own country.

OBSERVATIONS ON BUTTERFLIES.

BY MR. PETER MACKENZIE, OF WEST PLEAN, NORTH BRITAIN.

THE Cabbage butterfly, and others belonging to the same group of insects, may be seen at the accustomed season surveying their favourite plants and flowers in the gardens; and although they often do much injury in the caterpillar state to various species of plants, especially the Brassica family, in the autumn months, yet, as one remarks, there are but few individuals who have not been struck with the resplendent and gorgeous colours of some of the butterfly tribe ranging through the flower and kitchen-garden. Where is the human being who can behold even the most simple and unadorned of the species, "the common cabbage butterfly," without associating with it "the scenes of his or her childhood, so dear to the heart," when chasing the wayward roamer from field to field? Who can see the pupa of one of these insects without feeling anxious to become acquainted with the extraordinary process by which so singular a production is transformed into an animal of such beauty? The changes of an animal form produced by the progressive expansion of the enclosed organs of the body, and the successive shedding of the outer case or skin, are in no instance so striking or so extraordinary as in this group of insects. These changes or metamorphoses, as they are commonly but incorrectly termed, have been a favourite theme to the divine and the poet, and a most attractive subject of research to the naturalist. The transition of the humble group to the "gorgeous image" is the subject of the following beautiful passage in the classical work of Kirby and Spence:

"Were a naturalist to announce to the world the discovery of an animal, which for the two years of its life existed in the form of a serpent, which then penetrating into the earth, and weaving a shroud of pure silk of the finest texture, contracted itself within this covering into a body without external mouth or limbs, and resembling, more than anything else, 'an Egyptian mummy;' and which, lastly, after remaining in this state without food and without motion for three years longer, should at the end of that period burst its silken cerements, struggle through its earthy covering, and start into day a winged bird, what think you would be the sensations excited by this piece of intelligence?"

The subterraneous locality of the insect in its passive state, and the silken shroud, are indeed less applicable to the butterflies than to other insects; but the circumstances attending the transformations of these beautiful objects are not less remarkable than those of beetles and moths.

In its subsequent and final character the butterfly luxuriates on the exquisitely elaborated juices of the flower, and has the power to raise itself above the dull earth, and to transport itself through aerial space, as the readers hereof have often viewed it, lively with delight in the flower-garden,—

"Where he arriving, round about doth fly
From bed to bed, from one to other border,

And takes survey, with curious busy eye,
Of every flower and herb there set in order.
Now this, now that, he tasteth tenderly,
Yet none of them he rudely does disorder;
Never with his feet, their silken leaves defiles,
But pastures in the pleasures of each space."

We may conclude by quoting the last verses of a poem called "The Butterfly's Birthday."

" Ah, where were once her golden eyes,
Her glittering wings of purple pride?
Conceal'd beneath a rude disguise,
A shapeless mass to earth allied.
" Like thee, the hapless reptile lived,
Like thee he toil'd, like thee he spun,
Like thine, his closing hour arriv'd,
His labour ceased, his web was done.
" And shalt thou, number'd with the dead,
No happier state of being know?
And shall no future morrow shed
On thee a beam of brighter glow?
" Is this the bound of power divine,
To animate an insect frame?
Or shall not He who moulded thine,
Wake, at his will, the vital flame?
" Go, mortal! in thy reptile state,
Enough to know to thee is given,
Go, and the joyful truth relate,
Frail child of earth, high heir of heaven."

REMARKS ON THE CULTURE OF THE ORANGE-TREE.

BY M. A. BRUCE, ESQ., OF EDINBURGH.

How lovely in appearance, when in bloom or laden with ripened fruit, and how exhilarating to inhale the grateful perfume which the blossoms shed around! Mrs. Smith speaks of the orange-tree in her lines addressed to the humming-bird; a beautiful little creature, which, when stripped of its plumage, is not bigger than a bee; and, like the bee, it delights in hovering over the sweetest flowers, and sipping their juice, without doing them the least injury by its visit. Mr. Lambert, in his Travels in Canada, says, "that they may be seen there in great numbers, and that their plumage is as beautiful as that of the peacock." It is frequently called the bee-bird:

" There, lovely bee-bird! may'st thou rove
Through spicy vale, and citron grove,
And woo and win thy fluttering love
With plume so bright;
There rapid fly, more heard than seen,
Mid orange boughs of polish'd green,
With glowing fruit, and flowers between
Of purest white."

Captain Stedman, speaking of Paramaribo, says that its streets, which are perfectly straight, are lined with orange, shaddock, tamarind, and lemon-trees, which appear in everlasting bloom, while at the same time

their branches are weighed down with the richest clusters of odoriferous fruit. He was in the habit of purchasing forty oranges for sixpence : yet plentiful as they were, the orange is not a native of the country, but was originally imported there from Spain and Portugal. These trees are extremely beautiful, and adorned with their fragrant blossoms throughout the year. "As for the fine fragrance that is diffused through all this colony," says the Captain, "by the continued groves of orange-blossoms, and odoriferous fruits that it produces, it can be more easily conceived than described." In Surinam, the parlour floors are always scoured with sour oranges cut through the middle, which gives the house an agreeable fragrance : the negro girls, taking one-half in each hand, keep singing aloud while they rub the boards.

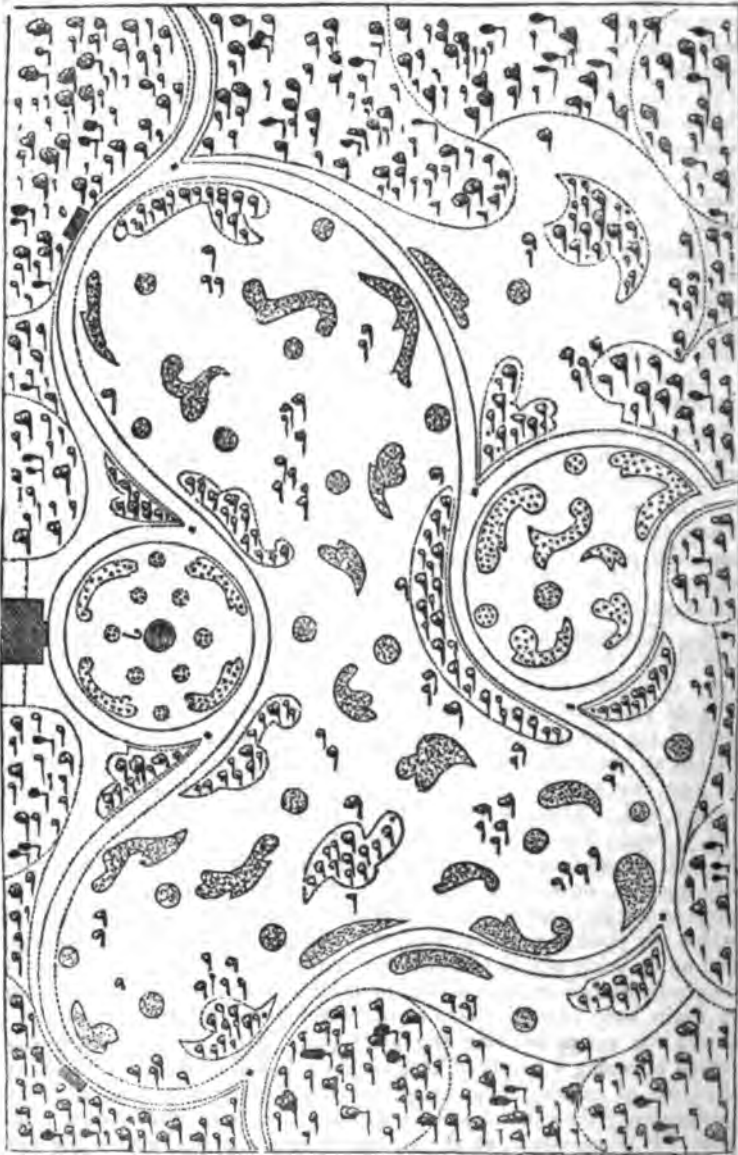
Speaking of the negro, Captain Stedman says : "His teeth are constantly kept as white as ivory ; for this purpose he uses nothing but a sprig of orange-tree, bitten at one end until the fibres resemble a small brush ; and no negro, male or female, is to be seen without this little instrument, which has, besides, the virtue of sweetening the breath."

Thunberg speaks of a curious Lilliputian kind of orange, growing in Japan : "A very small species of orange (*Citrus Japonica*) is frequently cultivated in the houses, in pots. This shrub hardly exceeds six inches in height, and its fruit, which is sweet and palatable, like China oranges, is not larger than an ordinary cherry.

"In visiting the principal forcing nursery establishments around Paris and other parts of the continent, during the spring of 1852, and the present one, I endeavoured to ascertain the best mode of culture. The following are essential :—There must be a very free drainage of broken pot, over which some pieces of rough turfy soil be laid. The compost to be turfy loam, well enriched with one year old cow-dung, the two being mixed up for six months before using. At the time of potting the soil must not be sifted, but chopped, and a sprinkling of pieces of charcoal added. During the growing and blooming period, the pots are plunged in tan, or stable dung, having a covering of tan at the surface to prevent the unsightly appearance of the dung. In one case a neat covering of green moss had been supplied, which looked well. Rain-water of a tepid temperature, and manure water too, is used ; but only just sufficient to keep the soil moist, not wet. The plants are frequently syringed over head, morning and evening, in dry weather, or when the house is of moderate heat. In order to prevent worms entering the hole at the bottom of the pot, the pot in which the plant is growing is cased in another pot, which is a size less, and on its being placed within it, the bottom of the plant pot does not descend within four or six inches of the case pot : this allows the water to drain away properly, admits the warmth to rise, and entirely precludes the worms entering the plant pot. After the orange-tree has ceased blooming a season of rest is allowed, and about a month before the time of exciting them to grow again they are re-potted, carefully putting away the exterior soil, to admit a due proportion of new compost. It is necessary, at the season of rest, that the plants are not supplied with bottom heat, but kept in a greenhouse, or similar habitation, having freedom of light.

PLANS OF FLOWER-GARDENS.

No. 1.—BY MR. MAJOR, KNOWSTHORPE, NEAR LEEDS.



THIS is an ideal plan of a flower garden, arranged in the English or natural style ; it is of considerable extent, drawn on a scale of sixteen

yards to an inch, and is suitable for a country residence. A greenhouse is shown, with wings of ornamental trellis-work attached, in which greenhouse plants are to be placed in summer-time; or, in place of such wings, two small plant-houses, or a pheasantry and aviary may be substituted. *b* is a fountain, and *c c*, are covered seats. The beds of various shapes, are proposed to be furnished with perennial and annual flowers exclusively, and the round beds to be composed of masses and groupes of bedding-plants, and to be edged round with terra-cotta or wire basket-work. The other beds to be furnished with choice evergreen and rich flowering shrubs, not only as affording interest and beauty in themselves, but also in producing varied forms and intricacies in the lawn and landscape. The square marks at the angles or junctions of the walks represent places for vases, statuary, &c.

In the shrubbery, dotted lines indicate portions which may be laid down in grass, to have here and there expanses or glades of lawn, as well as to give any desirable views.

HOW TO BLOOM THE ACHIMENES PICTA, AND GESNERA ZEBRINA ALL THE YEAR.

BY MR. JAMES HENDERSON, ASHROVD-HOUSE, FLINTSHIRE.

Achimenes picta.—Among the various species of this genus none are better deserving of notice than this one, whether for the richness of its velvety green foliage, traversed with pale, greenish white, or for the beautiful streaked and spotted flowers it sends forth when under good cultivation. By the following method of treatment I have had plants with numerous side shoots, three feet high, bearing an immense number of their beautiful flowers, and by having a succession, starting a portion at following periods, I have a display of these charming plants *all the year*; but though handsome at all times, they are especially so through the winter and spring months. It is easily increased by the scaly tubers of the stem, or may be propagated by the leaves, like a *Gloxinia*, also by division of the underground tubers. The last, however, is by far the most preferable, on account of their producing stronger plants. The leaves, when taken for cuttings, may be planted in a compost of two-thirds sand and one-third peat-soil, covered with a bell-glass, and placed in bottom-heat. Water must be given sparingly; the leaves are of a very succulent nature, and if kept too damp would soon go off. As soon as they have made sufficient roots (which they will do in about six weeks), pot them off into small pots, place them in bottom heat and they will soon make good plants fit for forcing. When the tubers are to be started, put them in pots or pans of moderate size, say from one foot to fifteen inches in diameter, and place them in a strong bottom-heat. As soon as they have grown to about six inches in height repot them, selecting the best plants and potting them to themselves, keeping the weaker ones for a succession. For potting use a compost of one-third leaf-mould, and two-thirds well-rotted dung, peat, and sand, with a little charcoal broken small. In potting, the

plants should be bent down into the mould, leaving about three inches above the surface. Keep them in heat as before ; as soon as they begin to grow vigorously supply them with plenty of water, syringing them twice a day, mornings and evenings. Air must be given sparingly for the first few days : afterwards give it freely, so as to ensure stout healthy plants. They may be potted as soon as thought fit, until they begin to show flowers, using the same compost, and giving good drainage. When they have done flowering, put the day of the month on each stick, which will enable one at any future period to know what tubers to start first. The tubers in their resting season require only to be kept dry and warm. By the same process of culture with the *Gesnera Zebrina*, I have larger-sized plants, profusely bloomed, and a gay succession all the year. Each single plant makes a handsome spreading head ; but in order to have very large bushes, I have pans larger in proportion, and put in each pan from four to six or eight plants, and the stems and branchlets being duly arranged, the mass forms an object of extraordinary beauty, amply compensating for the attention.

POPULAR AND GEOGRAPHICAL NOTICE OF THE RIBES SPECIOSUM, OR SHOWY GOOSEBERRY.

BY MR. H. STILWELL, OF PINE-APPLE NURSERY.

PERHAPS every person, seeing this most beautiful-flowering shrub, is struck with the similarity there is between its fine long crimson flowers and those of some of the *Fuchsias*. It has led some persons to insist on an affinity between the Currant and Evening Primrose, to which natural order of the latter the *Fuchsia* belongs. This, however, is not the case ; the former has but five stamens, and the latter eight ; and thus, by the Linnæan system, as well as the natural system, place them widely distinct.



The charming *Ribes speciosum*, or *R. fuchsioides* of some, is a native of California ; seeds of it were first introduced into England in 1828, and it first bloomed here in 1831. It is certainly one of the

most showy, neat flowering shrubs we possess. It can, by stopping the leads, be formed into a bushy plant; and if desired, it is readily trained against a wall or trellis, spreading admirably, and in that manner blooms beautifully. If a wall or trellis will allow it, it will extend upwards to the height of ten or twelve feet; and when so secured against a wall, or round a pillar in the open ground, has a most charming appearance. It will endure in the open air in any part of England, if the situation be a warm and dry one. It may, too, be grown in pots; and being placed in a pit or frame during winter, it induces the plants to bloom earlier in spring than the out-door ones; and they are highly ornamental for the greenhouse from the beginning of April, or earlier. The figure here given only shows the form of a specimen. The flowers are much larger. It merits a place wherever it can be grown. It grows freely in a good loam, with equal parts of grit and leaf-mould.

MISCELLANEOUS SECTION.

GARDEN ANTIQUITIES, No. 2.—The following is a literal copy of a letter to Sir Hans Sloane on preserving plants. It is now published for the first time from the original manuscript in the Sloane Collection in the British Museum, and will no doubt interest our readers:

Sir,—Mrs. Herbert, informed me the last Winter, you desired the receipt for preserving of Plants. I had then very few by me, and those only Gumed on paper, I have sent you, Sr by this days coach a few preserved in another manner, of which I beg your acceptance but Sr Hans Slone, must not think I do it without a mercenary view, for I set a much greater price than they deserve, when I desire leave, the next Winter, to give myself, and three, or four friends A sight of those Curiosities, which are so justly admired by all the world, the last time I had that pleasure, thought them far beyond any thing of the kind I ever saw.

if you have occasion of any farder explanation concerning the manner of preserving the plants, you may command all the information, that can be given by

Sir,
Your obliged
Humble servant,

MARY LISLE.

they are liable to no
alteration but by damp,
Crux Easton August ye 20th,
in Hampshire.

To preserve the Culer of Plants.

Take your plant and gum it down to Paper very smooth with Gum Arabac, dissolved in water, let it lay three Hours in the shade to Dry, then take a Camels Hair Pensil, and wash the plant all over very lightly, with the following Mixture. an Ounce of Ruff Spirit of Niter, put to it fourteen spoonfulls of fair water, when the Plant is washed

all over then put a sheet Blotting paper on it, and press it down lightly, to dry up the moisture, then uncover it, and let it lay three, or four, Hours, in the Shade to dry, then put it in a Book, or under some light waight, let it continue there for four or five days, then give it a Hot Sun, for a week or ten days, according to the thickness of the leaf, till the Juices are perfectly dry'd always putting it into the Book in the Evening, to keep it Smooth, and from the damp, for nothing Hurts the Coulers if they are kept Dry. Some Coulers require more wetting than Others, Blew, Green, and White, very little, Red and Yellow should be done with A Pensil pretty full of Licquor, but that must be learnt by experience, all double flowers, the leaves must be Dry'd seperatly, and when dry, put together. But all Buds, in the shade to dry.

Araculas, And all flowers that have A velvet leaf, Shou'd be wetted on the Backside of the leaf, before they are Gum'd to the paper.

To preserve Plants or Reptiles in Liquor.

Put two large Handfulls of Salt, to A Quart of Water, Boil it together, when Cold, filther it thro: A paper, to every half pint put 3 drops of Spirit of Niter, fix the flower down with wax in A Glass that is three inches Higher than the Head of the Plant, then pour the Liquor on it thro: A Glass funil that it may rise from the Bottom, of the flower, very Gently, then Cover it with A Glass Cover, that shuts very Close, and lute it down.

I have had but little experience of this, it being a tryal I am now making, having only keep one flower in it, which was an Aracula, for three months, without any Visible Change; as for insex, I believe they will take A greater Quantity of Spirit, than Plants, but I have not yet try'd any, nor weather Salt Petter, in a smaller Quantity Might not be more Effectual than Common Salt.

The Plant must be Cover'd A full inch above the Head with the Liquor.

SOME OF THE REMARKABLE PLANTS IN CHINA.—We had now entered the great Hang-chow silk district, and the mulberry was observed in great abundance on the banks of the canal, and in its patches over all the country. I was greatly struck with the appearance of a cemetery on the western side of the city of Keahing-foo, not very far from the city walls. Its large extent gave a good idea of the numerous and dense population of the town. It had evidently existed for many ages, for a great number of the tombstones were crumbling to pieces, and mingling with the ashes of the dead. But this "place of skulls" was no barren waste, like those churchyards which we see in large towns at home. Here the dead were interred amidst groves of the weeping-willow, mulberry trees, and several species of juniper and pines. Wild roses and creepers of various kinds were scrambling over the tombs, and the whole place presented a hallowed and pleasing aspect.

Leaving the old town behind us, and sailing westward, we entered a broad sheet of water of considerable size, which is probably part of, or at least joins, the celebrated Tai-ho lake. The water is very shallow, and a great part of it is covered with the *Trapa bicornis*—a plant called

ling, by the Chinese. It produces a fruit of a very peculiar shape, resembling the head and horns of a bullock, and is highly esteemed in all parts of the empire. I have seen three distinct species or varieties; one of which has fruit of a beautiful red colour. Women and boys were sailing about on all parts of the lake, in tubs, of the same size and form as our common washing-tubs, gathering the fruit of the *ling*. I do not know of any contrivance which would have answered their purpose better than those rude tubs, for they held the fruit as it was gathered, as well as the gatherer, and at the same time were easily propelled through the masses of *ling* without doing the plants any injury. The sight of a number of people swimming about on the lake, each in his tub, had something very ludicrous about it.

After we had passed the lake, the banks of the canal, and indeed the greater part of the country, were covered with mulberry trees. Silk is evidently the staple production in this part of China. During the space of two days,—and in that time I must have travelled upwards of a hundred miles,—I saw little else than mulberry trees. They were evidently carefully cultivated, and in the highest state of health, producing fine large and glossy leaves. When it is remembered that I was going in a straight direction through the country, some idea may be formed of the extent of this enormous silk district, which probably occupies a space of at least a hundred miles in diameter.

While gazing with wonder and admiration on the scene, my attention was arrested by a solitary pine tree of great size, standing about a hundred yards from the gateway. No other trees of any size were near it. Its solitary position near the pass, and its great height and beautiful symmetry, made it appear a most striking object. "What could it be? Was it new, or did we already possess it in England?" I must confess that for a few seconds I had eyes for nothing else; chairs, coolies, and mountains were all forgotten; and, I believe, had the guard of Celestials attempted to prevent me from going into Fokien, the only boon I should have asked at their hands would have been to be allowed to go and inspect this noble pine.

The Chinese guard, however, had not the slightest intention of interfering with my movements, and, as the tree was on the roadside, I soon came up to it, and found it to be the Japan cedar (*Cryptomeria Japonica*), a tree which I already had introduced into England, and which, even in a young state, had been greatly admired there. I had never before seen such a noble specimen; and although I would rather it had been something new, I yet felt proud of having been the means of introducing into Europe a tree of such size, symmetry, and beauty. It was at least one hundred and twenty feet in height—it might be much more—as straight as a larch, and had its lower branches drooping to the ground. It had not been "lopped," like other Chinese trees, and was evidently preserved with great care. My Chinaman looked upon it with great admiration, and informed me it was the only specimen of the kind in this part of the country, and that it had been planted by some former emperor, when he crossed the mountains.

The indigenous plants of these mountains are of great interest. The ravines were rich in bamboos, many of which were of great beauty. The

Chinese pine (*Pinus Sinensis*) was abundant everywhere, but did not attain a large size. Higher up, various species of oak were met with; and a thistle, not unlike the common English thistle, was abundant. Very few trees were to be seen near the top of the highest mountains, which were covered with low-growing shrubs, grasses, and other herbaceous plants.

I met with one or two new plants, which deserve particular notice. One of them was a very beautiful species of *Hydrangea*; another was a species of *Spiræa*, with red flowers, not unlike the *S. bella* in colour, but having a different habit. A fine species of *Abelia* was also met with on the Fokien side of the mountains, which will probably be a favourite in English gardens; its flowers are as large as those of the *Weigela rosea*, of a bluish tinge, and bloom in great profusion for a long time. When I first saw it, I took it to be the *Abelia Chinensis*, of Brown; but I observe that Dr. Lindley, to whom the plant was sent for examination, calls it *A. uniflora*. It is a curious circumstance that Dr. Abel, after whom the genus was named, discovered his plant on the same mountains, about a hundred miles to the north-west of the spot where the *Abelia uniflora* was found. He was then on his way with the embassy from Peking to Canton.

I dug up, from time to time, living plants of all these species, and took them on with me. Many a time I thought I should be obliged to leave them behind me, for the Chinamen could not see the propriety of being burdened with what they considered weeds, and of no value; however, by dint of determination and perseverance, by sometimes using promises and sometimes threats, I got them carried several hundred miles in safety, and at last deposited them in the garden of my friend, Mr. Beale, at Shanghai. They are now in Europe, and are, perhaps, the first plants which have been brought direct from the Bohea Mountains.—*Fortune's Visit to the Tea Districts of China.*

PROPAGATION OF GREENHOUSE AZALEAS.—I have succeeded best in propagating them when their wood is about half ripened. I use cutting-pots or pans, filled about half-way up with broken potsherds, over which a small quantity of rough material should be placed, to prevent the fine mould from mixing with the drainage. I fill the pots with a mixture of two-thirds peat and one-third sand, to within half an inch of the rim. After pressing the soil with a small pot, or circular board, made for the purpose, I cover with silver-sand, and after sprinkling it with a fine rose watering-pot, to settle it, insert the cuttings. After they are put in, they should be covered with a bell-glass, to prevent evaporation, and the pot plunged in a bed with a slight bottom heat. When rooted, they will require a little air, which may be given by tilting up the glass on one side. When they begin to grow in spring, they will require re-potting into small pots, in a mixture of peat and sand; they may then be placed in a gentle hotbed for four or five weeks, and afterwards removed to the front of a close house for some time. Towards the middle of May, they will require fresh potting into four-inch pots, in the same compost as before, pressing the soil firmly round the ball of the plant, in potting. They should be afterwards removed to a cold pit or frame, and kept close for two weeks or more, and well

shaded from the strong rays of the sun, until well established, when air and light may by degrees be admitted. Look over them carefully at intervals, and stop all luxuriant shoots that will bear it. The plants will be benefited by being lightly shaded, during sunshine, until their growth is established. Give all the light and air possible, in order to secure vigour and healthy appearance, and to ensure the ripening of their wood. They may remain without re-potting till the following spring, when they must be shifted, as the vigour of the plants may warrant. About the end of June, if they have done well, they will be assisted by another shift, and will still continue to increase in size, if properly attended to, as frequent shifting is found to be the most secure method of treatment, and less dangerous in the hands of amateurs. The following spring will produce fine young plants, in a fit state for flowering in six-inch pots. As they increase in age, a freer state of bloom is secured by adding a portion of loam to the compost, making one part of loam to one of peat, with a little sand, to preserve the porosity of the soil. They may be induced to flower earlier than usual, by a little forcing, in a warm part of the greenhouse.—F., *Gardeners' Chronicle*.

TO DESTROY THE SCALY INSECTS AND GREEN FLY.—I have a few plants of the Oleander Camellias, which for the last two seasons have been a good deal affected with the scaly insect; it struck me to try and cover over the parts attacked with a solution of starch. I did so, and in three days I gave a repetition of the application; these attentions wholly answered the end contemplated, the plants are clean and healthy. I applied the starch by means of the syringe; it hurts no part of the plant, but appears in all respects beneficial. The flower-buds and tips of the young shoots of my rose bushes (standards) were much pestered with the fly insect; I had a pailfull of starch and sizing mixed together and bent the buds and shoots into some of the liquid, and this destroyed every insect, and the plant was not in the least injured. I let the liquid remain untouched for three days, and then had the plants syringed overhead; it dissolved the liquid application, and my trees flourished and bloomed admirably.

CYCLAMENS.—If collected in our conservatories and gardens, the Cyclamens would afford an uninterrupted succession of flowers, at once agreeable in form and delicious in the perfume with which they fill the air. Like many other plants, Cyclamens have gone out of fashion. To prove this, it is sufficient to open the *Florilegium*, where upwards of ten species or varieties may be found. *C. Antiochum*, with a pure white corolla, and a throat of carmine-violet. *C. Aleppicum*, with snow-white flowers, the variety from which the ancient gardeners obtained the double-flowered one. *C. Coum*, a charming dwarf, whose stems seldom exceed two inches and three-quarters in height. *C. Europæum*, which grows naturally on the mountains of Switzerland. *C. vernalum*, to which that singular anomaly, known by the name of *C. linearifolium*, is referred; and *C. hederæfolium*, which has given rise to a series of varieties with white, purple, or streaked flowers. *C. macrophyllum*, leaves about five inches across, and flowers a fine rose. *C. periscum*, &c., &c.

"Cyclamens (compared by M. Van Houtte to the Gloxinias of America) are propagated by seed like the latter, and are also very analogous in their mode of vegetation; the division of bulbs, recommended for propagation, scarcely succeeds in either genus. The capsules of Cyclamen are supported by an erect flower-stalk, which, by a singular phenomenon of torsion, scatters the seeds on the ground, where they readily germinate. After the plants have flowered, the leaves die down; the bulbs are then to be taken up, and not replanted till the leaves begin to reappear. This takes place at various periods, according as the plants flower in autumn or in spring. Damp is fatal to Cyclamens; and when cultivated in pots, they require to be well drained. *C. hederæfolium* can be grown in the open ground, in shaded situations in light soil, where it produces in autumn delightful masses of rose-coloured or white flowers. The size of the bulbs, and the quantity of sap which they contain, allow of our retarding or forwarding vegetation. They may be potted every fortnight, or placed under frames with a greater or less degree of heat; and in this way a succession of flowers may be obtained from the month of November until April in the following year."—(*Flore des Serres*.)

The BEST New Seedling Dahlias shown in 1853, and which are to come out next Spring.

Admiration (Green's): tinged white, laced with scarlet; rather a flat flower, and second-rate in shape.

Agamemnon (Salter): orange-scarlet; fine form; good.

Aynes Norel (Mignet): white, deeply edged, with cherry, occasionally tipped with white; good cup.

Arc-en-Ciel (Tassart): white, bordered with rosy-red, and tipped with white.

Beauty of Slough (Bragg): white, deep laced with rosy-purple; good petal, depth, and outline; extra fine.

Butterfly (Salter): sulphur, striped and picoteed with rosy-red; good cup and centre; fine.

Dante (Salter): light-salmon, pencilled with red; fine cup and centre.

Duc de Brabant (Cailloux): scarlet capucine; good form and centre; fine.

Duchess of Sutherland (Mitchell): white, laced with purple; good centre and outline; constant.

Eva (Keynes): blush-white.

Fanny Keynes (Keynes): buff, laced with rose; good petal and cup; great depth; fine.

Fleur des Dames (Mignet): delicate lilac-peach, striped with maroon; good form.

Gem of the Season (Pope): lavender-rose; great depth of petals; fine centre and cup.

Godefroy de Bouillon (Cailloux): salmon-red; good cup and centre.

Henriette (Howard): buff-yellow; medium shape and centre.

Hesperus (Voisenon): nankeen, tipped with white; fine centre and cup; large.

King of the Yellows (Collier): clear yellow; good outline and petal, in the way of *Queen of the Yellows*.

Lady Mary Labouchere (Turner): large white, laced with lilac; good centre and cup; fine.

Leader (Keynes): purple, striped with maroon; medium centre, distinct.

Marvel (Pope): orange, striped with scarlet; good centre and petal; distinct and beautiful.

Mrs. Rawlings (Rawlings): white; full centre; medium outline.

Musquito (Prockter): puce-red; good petal and centre; medium outline.

Oriflamme (Cailloux): golden-buff; fine centre and cup.

Pigeon (De Knyff): orange-buff, tipped with white, reverse of the petals lilac; good cup and centre; fine.

Prince Alfred (Wyness): orange-buff, laced with red, dark centre; medium outline and petal.

Rachael Rawlings (Keynes): rosy-lilac, lighter-centre; in the way of *Anne Salter*; good.

Ringleader (Holmes): crimson; good depth of petals, but low centre.

Sardanapalus (Legg): maroon, tipped with white; medium outline.

Topsy (Keynes): large rosy-lilac, white, with white tips; good flower.

Willy (Rawlings): orange-scarlet, tipped white; medium outline.

ROYAL GARDENS, FROGMORE, NEAR WINDSOR.—“First, then, in passing through the glass-houses, we found in a greenhouse a noble specimen of the fragrant and beautiful *Luculia gratissima*, literally covered with large bunches of *Hydrangea*-like flowers just bursting into beauty. Of the value of this plant, too much can hardly be said, as we know of nothing more useful either for the purposes of decoration or for supplying cut-flowers. The specimen here was planted out in a prepared border in the centre of the house, where, without further attention than shading it from bright sunshine in summer, supplying water at the root and over the foliage to keep it free from insects, and merely excluding frost from it in winter, it was growing most luxuriantly. Many cultivators consider this fine plant difficult to manage, and to require the temperature of a stove; but it is evidently a greenhouse plant, thriving with no greater amount of artificial heat than may be needed to exclude frost and keep the atmosphere at about 45°, and rather dry while it is in bloom. In a stove, plants of *Ipomœa Leari*, led on strings over the front passage towards the top of the house, were still producing a profusion of showy flowers, which, displayed in this manner, were very effective. On the back wall of this house was *Allamanda cathartica*, covering a large space, and blooming remarkably well for this late season of the year. The beautiful *Bignonia venusta* was also nicely in bloom here, and clusters of unexpanded buds promised a long succession of its gay orange blossoms. This plant had apparently been pruned pretty closely last winter, and was producing blossom on every twig of the young wood, a condition in which it is seldom met with.”—*Gardeners' Chronicle*.



THE Chrysanthemum is the most valuable plant we have for autumn decoration, either for the greenhouse or the flower-garden; it fills up a blank that no other plant we have could do. It supplies a profusion of beauty of almost every colour. It has become a desideratum in all well-managed flower-gardens, having the facility to plant a proper proportion of the most showy kinds, which ornament them, when the season keeps open, up to December. This autumn the rains have injured them. In order to have the flower-garden lively as possible, the succession to Chrysanthemums must be made up with evergreen shrubs; it is readily done at a trifling cost by plunging in potted plants of *Laurustinus*, *Aucuba*, myrtle-leaved, broad-leaved, and variegated *Box*; gold and silver-striped, green-leaved, yellow and crimson-berried *Hollies*; *Arbutus*, *Rhododendron*, *Mahonia aquifolia*, *Phillyrea*, *Arbor vitæ*, *Bay*, *Kalmia latifolia*, dwarf *Laurels*, *Daphne pontica*, *Cedars*, *Cotoneasters*, &c. A garden thus furnished produces a very cheering appearance; and those who have not seen one so ornamented cannot adequately conceive of its beauty and finished neatness. This attention most amply repays for the small expense, producing a lively appearance, instead of having bare beds for several months. If any *Tulip* bulbs be still out of ground, plant them as early as possible.

There are a number of very handsome single and double varieties of *Anemones*, which are highly ornamental to a flower-garden, whether in patches in the beds, or as an edging. To bloom well next season they must be planted immediately.

The *Gentiana acaulis* is a most charming spring flower, suited admirably for edging or patches. Its intense blue flowers, in contrast with *Anemones*, *Hepaticas*, and similar early-blooming plants, is very striking. Attention will be necessary to protect the tender kinds of herbaceous, by a layer of dry leaves, pots, boughs, or branches of evergreens, &c., also the stems of tender climbing and other *Roses*, by tying a covering of furze over them, that, whilst it fully protects, admits sufficiency of air for the wellbeing of the plant.

Auriculas and *Polyanthuses* require plenty of air in fine weather, and but little water. The like attention will be required to *Carnations*, *Pinks*, &c., kept in pots. *Dahlia* roots should be looked over, to see if any are moulding or likely to damage. Let the roots be dry before they are laid in heaps. Newly-planted shrubs should be secured to stakes, so that they are not loosened by the wind. Where it is desirable, reduce patches of border-flowers to a suitable size. Ten-week *Stocks* and *Mignonette*, in pots for blooming early next spring, to adorn

a room or greenhouse, must not be over-watered, and be kept from frost. A cool frame, well secured by soil or ashes at the sides, and plenty of mats or reeds to cover at night, will answer well. During hard frosts, if additional soil be required for flower-beds upon grass-lawns, advantage should be taken to have it conveyed at the time, so that the turf may not be injured by wheeling. Pits or beds for forcing Roses, &c., should be prepared early in the month. Tan or leaves are most suitable, unless there be the advantage of hot water or steam. New-planted shrubs of tender kinds should have their roots protected by laying some mulch. Suckers of Roses, &c., should now be taken off and re-planted for making bushes, or put in nursery rows. Soils for compost should now be obtained. Beds of Hyacinths, Tulips, &c., should have occasional protection. Any roots not planted may successfully be done, in dry, mild weather, till February. Sweet Violets: plant these little gems as much as possible along the sides of walks, near seats, rooms, banks, under trees, &c.; they are so highly fragrant as always to be acceptable, and more especially being early spring flowers. Encourage all the spring ornaments as much as possible: Crocuses are pretty flowers, always gay in sunshine, and give a peculiar cheerfulness to every place they occupy; never be sparing in the quantity of them near a dwelling-house. Do not omit the first flower that awakes thee from the repose of winter:

“A flower that first in this sweet garden smiled,
To virgins sacred, and the SNOWDROP styled.”

IN THE FORCING STOVE.

Aconites, Crocuses, Violets, Mignonette, Stocks, Tulips, Cyclamens, Narcissus, Lilies of the Valley, Hepaticas, Primroses, China Primroses, Persian Irises, Cupheas, Hyacinths, Pinks, Carnations, Tree Carnations, Heliotropes, Scarlet Geraniums, Salvias, Gardenias, Roses, Azaleas, Cinerarias, Jasmines, Honeysuckles, Deutzias, Rhododendrons, Persian Lilacs, Rhodoras, Ribes, Mezereums, Correas, &c., required to bloom from January, should be brought in early in the present month. The plants should be placed at first in the coolest part of the house; never allow them to want water. Pots or boxes containing bulbous-rooted flowering plants, as Hyacinths, Narcissus, Persian Irises, Crocuses, &c., should occasionally be introduced, so as to have a succession of bloom. Many persons who take a delight in growing Hyacinths or other bulbous plants, for adorning a room or window, in winter or early in spring, have been frequently disappointed by the abortiveness of some and weakness of others. This principally arises from the inability of the plant to develop itself with a rapidity equal to the quantity of moisture it imbibes, on account of its upper surface being acted upon too immediately by the atmosphere; hence arises the necessity of covering the bulb. That such is a fact is evidenced by the admirable and certain success of nearly every bulb, especially Hyacinths, that is covered with about six inches of old spent bark or ashes. This or some similar light material should always be used. Even bulbs intended to bloom in glasses we prefer starting in the cold bark, and then transferring them to the glasses when the roots are about two

inches long. Where such covering is not adopted, the pots or glasses should be kept in a dark place till the roots are two or three inches long, and then bring them to the light. Always use water for the glasses that is just aired; cold water gives a check which greatly injures the roots, and, consequently, the bloom. Cactus plants that have been kept out of doors, or in the greenhouse, should occasionally be brought into the stove for flowering, which gives a succession. If any of the forced plants be attacked with the green fly, a syringe with diluted tobacco-water will destroy them. If the leaves appear bit, and turn brown (the effect of damage by red spider), a syringe of soapsuds at the under side of the leaves is effectual to destroy them. The glutinous substance remaining, not only kills those it is applied to, but prevents others returning there. The old *Eranthemum pulchellum*, with its fine blue flowers, *Justicia speciosa*, *Gesneriæ zebrina*, *Justicia pulcherrima*, *Aphelandria cristata*, *Poinsettia pulcherrima*, *Cestrum aurantiacum*, and *Begonia fuchsoides*, are fine winter ornamental blooming plants.

IN THE GREENHOUSE, &c.

As much fire as will barely keep out frost will only be necessary, and for the purpose of drying up damp arising from foggy nights, or from watering, all possible air should be admitted in the daytime; but mind to keep the plants from damage by frost.

Fuchsias and greenhouse plants, intended to be inured to the open air, will require to have protection at the roots, and probably, for the first winter, over the tops too, by furze branches, canvas, wicker baskets, mats, &c. If greenhouse plants require watering or syringing over the tops, let it be done in the morning of a clear day, when air can be admitted; and towards evening a gentle fire-heat should be given. *Calceolarias* must be in a cool situation. Whilst in a cool and moist atmosphere, the shoots will often push at the underside numerous root-lets; where such are produced, they should be taken off and potted. *Pelargonium* plants for exhibition should be repotted by the middle of this month; according to the size of the plants must be the pots. The smallest-sized pots in which plants are to be when shown are the 24's, eight inches in diameter, and the largest-sized are eleven inches in diameter. The plants need not be potted into these sizes now, but a size less, and in February be re-potted into their final pots. The plants must not be crowded together, but be kept apart. *Cinerarias* are often attacked at this season by the green-fly; let the plants be placed in a hot-bed frame, and be fumigated with tobacco-smoke at the first appearance of the insects.

BRIEF REMARKS.

STATICE ARBOREA.—This fine species has been grown very successfully in a temperature ranging about 55°, potted in equal portions of loam, peat, and sand; it will thrive vigorously if it is shifted when its roots are becoming plentiful, affording it very abundant and ample drainage; growing in its native habitat, surrounded on all sides by the ocean, would seem to furnish a hint that water, impregnated with saline particles, would be of great importance in its artificial treatment; and if it could be placed within the influence of evaporation from water of this kind, there are some grounds for supposing that much benefit would follow. Those who have the plant under their charge would do well to institute a series of experiments on these points.

CLEMATIS.—As conservatory climbers, *Clematis azurea grandiflora* and *C. sieboldii*, and the fine new variety, *Sophia*, noticed in "New and Rare Plants" in this Number, deserve especial recommendation; they both grow and flower freely, requiring only good rich loamy soil, and plenty of room to extend their branches; their blossoms are very handsome, and are produced in abundance. Notwithstanding that both species are hardy, and succeed well in the open air, they deserve very extensive cultivation in conservatories, especially if grown in a position to enjoy a due share of light, in which case they flower more abundantly; either trained on an extended scale, up pillars, or coiled to a wire frame-work.

CACTUSES AND EPIPHYLLUMS.—I have lately seen a very interesting adaptation of the well-known fact, of the various kinds of Cactus and Epiphyllum growing freely when grafted on *Pereskia aculeata*. This plant, which is of rapid growth, almost approaching a climbing habit, was, in the case alluded to, trained over the pathway in a conservatory, among other climbing plants. In this situation it had been grafted in several places with *Epiphyllum speciosum*, *truncatum*, and the violet and flesh-coloured varieties; also *Corcus flagelliformis*, which were growing freely, and producing flowers in abundance. The stem of the *Pereskia* being hidden by the other plants, would almost have induced one to fancy that the Cactuses, &c., were entirely living on air; and although a little penetration would, of course, convince a person of his error in this supposition, it did not at all lessen the effect produced by their appearance in this situation.—*John Scott*.

DAHLIA MACULATIFOLIA—This plant, which will be offered to the public the ensuing spring (and for the introduction of which we are indebted to Mr. John Cordery, a florist of some note), is certainly one of the finest and most elegant plants for ornamental and decorative purposes that has yet been introduced to the notice of lovers of floriculture. Its handsome lanceolate bright-green foliage, beautifully mottled with yellow, contrasted with its pretty lively rose-coloured blossoms, giving it a novel and attractive appearance, such as will justly entitle it to the now uniform opinion of all who have seen this flower, that it is a most valuable acquisition to the beautiful section of *variegated-leaved* plants.—*J. R. T.*

CULTURE OF SHOW PELARGONIUMS.—Observing that a correspondent solicits general hints on the management of the large-flowered section of Show Pelargoniums, I forward the particulars of my method, having been one of the most successful exhibitors at the great London meeting for ten years. I strike the cuttings about the beginning of June, or sooner, if the plants will bear cutting. As soon as rooted, they are removed into 60-sized pots, and set in a shady situation on boards or slates, or in a cold frame. When rooted, they are removed to an open situation, and as soon as the plants will bear the sun without flagging, they are stopped. In September they are repotted into 48-sized pots, and at this time I commence training. In December and January those that are sufficiently strong are again shifted into 16-sized pots; in these pots they are allowed to bloom. About the middle of July or beginning of August they are headed down and set in a shady sheltered situation; and when the plants have shoots near an inch long, the soil is nearly all shaken from the roots, and they are again repotted into the same sized pots. As the shoots are formed they are carefully thinned out. In the greenhouse, the plants intended for exhibition are kept four feet apart; the front sashes are kept open on all convenient occasions. In November the plants are stopped, and a stake put to each shoot. The leaves are thinned out to allow the air to circulate freely. In December and January the strongest plants are again selected and potted into 8-sized pots, and at this time additional heat is applied to enable the plants to root rapidly. In February they are syringed in the afternoon, but sufficiently early to allow them to dry before night. In March they are again repotted in 2-sized pots; water is now very liberally supplied. When the flowers begin to open, a shading of cheese-cloth is used on the outside of the house. Air is admitted before the sun has much power on the glass, and this is found to prevent the attacks of the green-fly. The success of all the other operations depends on the mode of applying fire heat. The fires are lighted at three or four o'clock in the afternoon, and allowed to go out about nine or ten. They are again lighted about three or four o'clock in the morning. The thermometer during the night is kept at 40° or 42° Fahrenheit. The soil is prepared thus,—a quantity of turfy loam is chopped and laid up in a heap, a quantity of fresh stable litter is then shaken up and laid in the form of a mushroom-bed, and about one-third of cow-dung added to it. If the weather is dry at the time, the manure is well watered; liquid manure and the steam or ammonia is prevented from passing off by a covering of slates. In this state it is allowed to remain fifteen or sixteen days, and is

then mixed with about an equal quantity of fresh loam, and when the mixing is completed the heap is at last covered with loam. At the end of a month or five weeks it is turned over three or four times, in order that the dung and loam may incorporate well together. In twelve months it is fit for use. To two barrowfuls of this compost is added one of leaf mould, and a peck and a half of silver sand.

USES OF LEAVES.—In the present state of agricultural economics, when our leading farmers are debating the value of long straw or chopped straw, or no straw at all for bedding their cattle, it is remarkable that leaves, which are everywhere at the present time, and voted a nuisance, should not be used for littering farming stock. For some weeks past my cows and horses have been bedded with leaves, and nothing can answer better, being cheap and plentiful, and moreover forming an excellent bed. Of the quality of the manure from such a combination of nutritious substances, it is scarcely necessary to speak, but it may not be out of place to remark, that a combination of horse and cow manure, with leaves properly fermented and reduced, would, perhaps, for horticultural purposes, especially for pot plants, form one of the finest manures that could be used. The bailiff of a gentleman in Sussex, on a heavy land farm, used leaves for litter some years back, and, by using them plentifully in the fold-yard, produced such quantities of manure as quite to eclipse his neighbours in the quantity and quality of the corn crops he produced. I would strongly recommend gardeners to try the experiment of manure for potting purposes, prepared as intimated above. For soft-wooded plants I think they will find it perfection, especially if fermented at a temperature sufficiently high to destroy all insects and their eggs; for I find cow-dung, which has been subjected to sufficient heat to char it, is just as good as when kept until it is three or four years' old. It is an excellent plan to subject all composts intended for potting plants to a temperature sufficient to destroy both seeds and insects before using it; and if it is a little warm at the time of using it, tender plants will be much benefited thereby; and at this cold season men will do much more work in a warm shed with warm soil, than if their hands are in a cold soil from morning till night. In fact, a heating apparatus, such as a stove for the purpose, or arrangements for using the waste heat of a hot-water boiler, is a very necessary and profitable appendage of an establishment where much potting is to be done.—*W. P. Ayres, Blackheath. —Gardeners' Chronicle.*

NEW EDGING PLANT.—I send you a spike or two of one of the prettiest of autumnal shrubs, *Polygonum vacinifolium*; its vivid pink is destroyed by the frost. Ever since August it has been beautiful. For an edging shrub it is excellent.

GRAFTING EPIPHYLLUMS, CERREUS, &c.—I have been exceedingly successful in this operation with the above, and others of the *Cactus* order of plants, and therefore forward the particulars of my procedure:

Stocks.—I have used *Cereus triangularis*, *C. speciosissimus*, *Opuntia Braziliensis*, *Pereskia aculeata*, and *longispina*, but find none equal to *Cereus speciosissimus*; it is much hardier than any of the others, and not so liable to damp off.

The best method of preparing the stocks is in February to take some of the strongest shoots, from six inches to six feet, as any length will do; then, with a sharp knife, remove the eyes for four or six inches from the bottom; this prevents the stocks making suckers. Let them remain in a cool place for a few days to dry, to prevent damping; then place each cutting in small pots of good rich sandy loam, and filling in a good bark bed, withholding water for ten or twenty days. When the roots protrude through the bottom of the pots, remove into larger, which, when well established, are ready for grafting.

The operation is performed by taking off the head of the stock where the columnar axis has become firm, dividing it with a sharp knife to the depth of a quarter of an inch, being careful not to bruise the soft outer coat. Grafts of any length, from six inches to eighteen inches long, will succeed, those of last year being the best. Leave the end of the graft wedge-shaped, that is, the columnar axis three-fourths of an inch, clearing away all the soft fleshy part to that length; then press it firmly into the stock until both edges meet, passing a spine of *Opuntia longispina*, or some other strong *Opuntia*, through the stock and graft, to keep it from rising out of its place; bind a little soft moss round the part operated upon, and keep it shaded; in a week or ten days it will have taken hold, provided it is properly performed; in the course of a month the moss may be removed, and the graft cut to four or six eyes, if a bushy regular head is required. Plants on stocks six feet high look the best trained on mushroom-shaped trellises. I have found grafts with several shoots of from six to twelve inches each succeed as well as smaller ones, provided the stocks are healthy. I have a plant at this time of *Epiphyllum speciosum*, grafted on

Cereus speciosissimus Sept. 4, 1846; the stock is six feet high, and the circumference of the head twelve feet; many of the branches or leaves four feet long.

ARTIFICIAL FLOWER-MAKING.—Artificial flower-making is not an insignificant trade. An inquiry was made into the industrial statistics of Paris in 1847, which lets us into a little secret in this matter. The total manufacture of cambric flowers in that year was prodigious, amounting in value to more than 400,000*l.* sterling. We, in England, only took 12,000*l.* worth of this value; for we pride ourselves on being able to make our own artificial flowers. The cambric, muslin, gauze, velvet, silk, and other materials were procured from St. Etienne, St. Quentin, and Lyons; the dyes and colours were prepared expressly for the purpose by manufacturing chemists; the buds, leaves, petals, stamens, pistils, and other component parts, were made in small workshops by persons who each attended to only one part of a flower, while the whole were fitted together in other workshops. Even these workshops are frequently limited to one single kind of flower each; so completely is the division of labour carried out. There were about 50 small manufacturers of petals and stamens, and other component parts, employing about 500 persons; while there were nearly 600 dealers or vendors, who employed nearly 6,000 persons in building up the various integers into whole groups of flowers. Of this immense number of persons, about 5,000 were women, whose average earnings were estimated at 1*s.* 8*d.* per day. Several of the manufacturers effect sales to the amount of 10,000*l.* a year each. We must, therefore, regard French flower manufacturers as commercial men of notable import.—*Dickens's "Household Words."*

TEMPERATURE FOR SUCCESSFUL PLANT-GROWING.—The temperature which is most favourable to plants in the natural state is most likely to agree in an artificial one; the practice of sustaining a temperature nearly uniform is not the proper method of treating plants, a diurnal season of rest being as necessary to a plant as to an animal; neither can they be constantly under the same exciting power of heat without injury, as is obvious from the enervated and unhealthy state of stove-plants when an equable heat is attempted. In such cases, where plants are submitted to such a degree of heat as to keep them constantly growing, they are sure to become exhausted, sickly, and etiolated. It has been shown by vegetable physiologists, that the leaves of plants do not perform the same functions in the dark as in the light, and that a rise of temperature has a sensible effect on their organs of respiration. If the air be allowed to cool in the night, it will generally deposit a portion of vapour on the plants; if it be kept warm it will, on the contrary, in consequence of respiration, tend to exhaust them of moisture, and as the leaves of plants absorb oxygen and moisture in the night, and give out a portion of this oxygen in the day, when exposed to the light of the sun, we may infer that both light and heat, the exciting causes of the operation of the day functions, should be less powerful in the night. A view of the provisions of our all-wise Creator will tend to confirm this opinion. Nowhere within the limits of vegetation is the heat equally powerful in the night as in the day. In a stove for plants of the torrid zone it is desirable to know the mean noonday heat of the coldest month, and the mean night heat of the same period, at some place within the tropics where it is known to be most favourable to the vegetation of plants of that zone. It will also be requisite to know the mean noonday heat of the hottest month, and also the mean night heat of the same time, in order to regulate for the summer temperature. The mean temperature of the year is of little use in this inquiry, because our object is to ascertain the change of temperature most conducive to the well-being of plants, and the lowest temperature to which they may be safely exposed, under the impression that the Author of life would have provided them a uniform heat if it had either been necessary or useful.—*T. Morton, Hull.*

TYING PLANTS.—Much of the beauty of plants in many collections is lost in consequence of the ill judged mode of tying them up; it too often happening that valuable plants are tied into a thick faggot-like bundle, instead of its being made an operation of taste, on which the beauty of the plant mainly depends. This arises from a want of discrimination in affording support to plants which, under artificial treatment, are dependent on man for all their wants. It ought to be constantly borne in mind, that no plant should be tied which does not absolutely require it; that tying, whenever resorted to, except in the case of climbing plants, should be simply to assist the natural habit of the plant; and that every stake should be removed as soon as the shoot it supported is capable of retaining its position without such assistance.

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P R E F A C E.

AGREEABLY to periodical custom, we have again the pleasure, on the completion of another Volume, of thanking our friends and correspondents for the continued confidence they have manifested in "THE FLORICULTURAL CABINET," and for the liberal support which they have afforded to it, many of whom, "we feel proud to state," have done so for the long period of twenty-two years. For such liberal aid, we return them our warmest and most grateful thanks; and, at the same time, venture to hope, "that the *evidence* we have at all times manifested of our ardent desire to be useful in promoting the cause of Botanical, Floricultural, and Horticultural science," will secure for us, in the year 1855, a still *larger amount* of support; and we respectfully solicit the continued co-operation of our friends in all parts "*abroad*" as well as "*at home*," as also of all who feel an interest in flowers and floriculture; and, thus assisted, we are more determined than ever, "to spare neither *trouble* nor *expense*," to render this Magazine as *perfect* and *useful* as possible. The realisation of our anticipations can only be fully effected but *with* such hearty co-operation, and therefore we hope, that every new fact, "suited for our pages," which may come under their observation, may be *early transmitted* to us for publication; thus, "and thus only," is it possible for us *increasingly* to attain that eminent *usefulness* which we are anxious should always characterise the FLORICULTURAL CABINET. We think every reader of our pages may contribute *somewhat* that will be interesting and useful in some degree. The student of Botany, or practical Floriculturist, has not hitherto acquired that consummate knowledge of the *vegetable world*, to enable him to say "the field of discovery and investigation exhibited a tendency *too narrow*, and the *boundary*, "beyond which the science could not be carried," was visible before him. That this has never, *in any instance*, been the case, all past experience abundantly testifies. Fact after fact follows in the rear of its predecessor, and dis-

PREFACE.

coveries roll on like a mighty stream, proving, with a force irresistible, that its resources are boundless. Who dare set a limit to the beautiful forms that may yet be poured forth from the vast tracts of our GLOBE, still unexplored? or who will venture to predict that nature has been "over-worked," and that she will, in future, resist all the efforts of Floricultural skill? We think "*Floriculture* has only just displayed its *opening* buds;" but, at the same time, surveying what has (within a few years last past) been accomplished, we have bright hopes with respect to the future continuous development of the ever-expanding bloom, and we again ask our readers to unite with us in contributing to promote its more universal display. To aid in its realisation, we have made arrangements, which are in preparation, that our NEXT VOLUME will be on a MUCH IMPROVED scale. As heretofore, we shall exercise care in the selection of only the BEST AND MOST SHOWY PLANTS for our PLATES, and the entire execution of the *engraving* and *colouring* of the subjects will be of "*first-rate excellence*," surpassing that of any other floral publication issued in this country. We shall also give superior engravings of NEW TREES and SHRUBS, as well as PLANS of gardens, and grounds. We therefore reiterate to our readers, HELP us, by your PEN, PENCIL, and ADVICE; and, as the publication shall merit, we respectfully ask you to recommend it to the lovers of flowers.





Madame Desrie Giraud.



ROSE, MADAME DESIRÉE GIRAUD.

" Rose ! thou art the sweetest flower
That ever drank the amber shower ;
Rose ! thou art the fondest child
Of dimpled Spring, the wood-nymph wild."

THE ROSE, which is the emblem of beauty and the pride of Flora, reigns **QUEEN OF THE FLOWERS** in every part of the globe ; and the **BARDS** of all nations and languages have sung its praises. Yet what poet has been able, or language sufficient, to do justice to a plant that has been denominated the "Glory of the Spring," and the "Ornament of the Earth?"

" Queen of the flowers that made Eden's garden gay,
The morning blushes of the Spring's new day."

Poets have celebrated its charms, but not exhausted its eulogium, for its allurements increase upon a familiarity ; every successive season and fresh view present new beauties and supply additional delight. Hence, it renovates the imagination of the Bard, and the very name gives harmony to his numbers :—as soft as a rose-leaf ; as sweet as a Rose ; rosy-clouds ; rosy-cheeks ; rosy lips ; rosy blushes ; and rosy-dawns : whilst its fragrant perfume gives sweetness to the air.

To paint this universal emblem of delicate splendour in its own hues, the pencil should be dipped in the tints of Aurora, when arising in her aerial glory. Human art can neither colour nor fully describe so fair a flower. **VENUS** herself feels a rival in the **ROSE**, whose beauty is composed of all that is exquisite and graceful. The "beauty of the morning" is allegorically represented by this flower, and **AURORA** is depicted strewing roses before the chariot of **PHÆBUS** :

" When morning paints the eastern skies,
Her fingers burn with roseate dyes."

How general, too, has the Rose been associated with, and made the symbols of, very opposite sentiments. Piety has seized it to decorate the temple, whilst Love expressed tenderness by wreaths, and Mirth revelled, adorned with crowns of roses; Grief strews it on the tomb, and Luxury spreads it on the couch; it is mingled with our tears, and spread in our gayest walks.

Perhaps the most beautiful period of the Rose is when partly blown, —then we have the promise of a continuance of delight; but when full-blown, she inspires us with the fear of losing her.

“Nature and fortune join’d to make thee great :
Of Nature’s gifts thou may’st with lilies boast,
And with the half-blown rose.”—SHAKESPEARE.

The interest which flowers have excited in the breast of man, from the earliest ages to the present day, has not been confined to any particular class of society, or quarter of the globe; and though the rude savage of the forests, in the joy of his heart, binds his brow with the native flowers of his woods, yet the *cultivation of flowers* increases in every country, in proportion as the blessings of civilization extend. And of all proper luxurious indulgences, that of flowers is the most innocent, whilst man alone seems capable of deriving enjoyment from them; that, too, commences with his infancy, remains the delight of his youth, increases with his years, and becomes the quiet amusement of his age; admiring, with increasing amazement, the wonderful works of the Almighty, tending thus to soothe declining years.

Of all the floral embellishments of the garden, THE ROSE is the most general, and is so *universal an ornament* thereof, as to be grown in nearly every garden, from that of the palace to the humblest cottage. Its presence supplies beauty to the sight and fragrance to the smell. But of all the delights in floriculture, perhaps that of raising new varieties of flowers is the most pleasing, and in many instances very profitable also. In this particular pursuit with the Rose, the nurserymen and florists on the Continent greatly excel, as is abundantly testified by the immensity of kinds which enrich the collections of our own country’s nurseries and gardens, and from whence the profuse displays of such beautiful varieties are supplied to the Floral Exhibitions of London, as well as throughout the provinces. Amongst the *most beautiful* which have been produced, are several fine striped varieties, and the one we now figure stands *pre-eminently superior* to every other, and a plant of it ought to be in every garden. The stock of it is in the possession of Mr. Van Houtte, and plants of it may be had in this country next April.

This charming variety is a seedling which sprang up near to a plant of the Baronne Prevost Rose, in the garden of Madame L. G. D. Haussy, of Marley, near Versailles, in France. It is an “Hybrid Perpetual,” and a very free bloomer. The flowers are regularly “and very distinctly striped, some with crimson, others with amaranth, and the remainder with slate colour, but the individual blossom has stripes only of *one colour*; so that one blossom has crimson stripes, a second has amaranth stripes, and a third has stripes of a slate colour. This very singular distinction of the flowers renders it peculiarly beautiful.

NOTES ON NEW OR RARE PLANTS.

BILLBERGIA THYRSOIDEA, DENSE FLOWERED.—A stove plant, from Brazil, of the natural order Bromeliaceæ (Pine-apple plant). The leaves are two feet long, broad strap-shaped, serrated. The flowers are produced in a large, long, dense spike, each blossom being about three inches long, red, with a blue-tipped stigma and yellow anthers. It is a handsome species, well deserving a place in the stove. Messrs. Henderson, of Wellington-road Nursery, have bloomed it.—Figured in *Botanical Magazine*, 4756.

CIRRHOPE TALUM CORNUTUM, HORN-BEARING.—A very singular and pretty flowering stove orchideous plant, which Mr. Simon sent to the Royal Gardens at Kew, from Eastern Bengal. It has recently bloomed in the stove at Kew. The leaves are leathery, oblong, about nine inches long. The flower-scapes are each about ten inches high, and terminate in an umbel of from six to ten flowers. Each blossom is two inches long. Petals small, of a yellowish-green and white. Sepals, upper one small, of a similar colour to the petals, but additionally sprinkled with purple dots. The two side ones are nearly two inches long, pendant, and meet at their edges, so as to form a tube of that length, of a dark-purple blood colour, green at the tip, nearly white and spotted at the base. The entire umbel of flowers have somewhat the appearance of some of the *Lachenalias*.—Figured in *Bot. Mag.*, 4753.

COLEUS BLUMERII.—It has been considered to be a native of Java, but BLUME, who mentions it as being there, states it is cultivated in the gardens, and does not intimate of its being a native plant. We first heard of its being introduced from thence to Holland, and subsequently distributed into Belgium, and more latterly received from Belgium into the various London nurseries. The plant is exceedingly ornamental, the leaves being most strikingly mottled, and blotched with purple and crimson; edged with vivid green, or yellow-green, according to age. Each full-grown leaf is five inches long, and half that in breadth. The plant is very branching, and forms a compact bush two feet high, or upwards, and half a yard in diameter. The flowers are, in form, like some of the *small-blossomed* *Salvias*, produced in long spikes, from six to eight inches long. Each blossom is about three parts of an inch across, having a tube about half an inch, blue, and the other portion of the corolla white and purple. It succeeds best in the stove, where plants may be had in bloom all the year. It will flourish in a warm part of the greenhouse, from March to November, and in a warm sheltered situation in the open ground, during summer. It merits a place in each situation named. It is easily cultivated and increased.—Figured in *Bot. Mag.*, 4754.

DENDROBIUM CYMBIDIODES.—A native of Java. The flowers are produced in terminal spikes, of about seven blossoms in each. Each flower is nearly three inches across; sepals and petals are narrow, of a buff-yellow colour. Labellum, about an inch across, white, sprinkled with dark purple linear blotches. It is in the collection of stove Orchids in the Royal Gardens at Kew.—Figured in *Bot. Mag.*, 4755.

DIDYMOCARPUS HUMBOLDTIANA.—Mrs. General Walker first sent to this country copious specimens of this neat, pretty plant, from the elevated mountains of Ceylon. The habit and appearance of the entire plant is very much like the *Chirita Sinensis*, excepting the flowers being of a smaller size. The blossom is of a Gloxinia-like shape, nearly an inch long, and as much across the front of the full opened flower; of a pretty pale-lilac colour. Each of the flower-stalks rises about six inches high, and terminates in a loosish panicle of five or six blossoms. It flourished in the Royal Gardens at Kew, in the greenhouse, and bloomed there last autumn. It is neat and pretty.—Figured in *Bot. Mag.*, 4757.

REMARKS ON A MORE EXTENDED CULTURE OF THE ROSE.

BY MR. PETER MACKENZIE, OF WEST PLEAN, NEAR STIRLING.

At this season of the year (December 10th), when the weather is open, many things might be done that would add beauty to places that at present have much need to be improved. This is a good time yet for planting roses; and garden and pleasure-grounds might be more gay in summer and autumn if what are called *Pillar Roses* were more introduced than what they are; even cottage gardens could have them, and the roadside of the country should be more enlivened with their beauty and fragrance. Mr. Rivers says, "One of the prettiest floral fancies is that of forming pillars of roses." These pillars consist of roses trained in iron stakes, from twelve to fifteen feet high, well painted, and they form the most durable, as well as the most picturesque objects in garden scenery. Merely to show how a heap of clay may become a mount of beauty, we levelled and made circular a large piece of white sand and blue clay, dug from a pit containing water. On this, with a small portion of dung and pit-sand to each plant, we planted some of all the hardy climbing roses, and the effect is now exceedingly beautiful, and in another summer it will be a mount of rose pillars, each from eight to ten feet high.

Many of these universal favourites would have a fine effect in the numerous wild and romantic situations in Britain. Many of them could be set up in such places as are described by the author of the "Minstrel," when he says:

" Along this narrow valley you might see
The wild deer sporting on the meadow ground,
And here and there a solitary tree,
Or mossy stone, or rock with woodbine crown'd;
Oft did the cliffs reverberate the sound
Of parting fragments tumbling from on high,
And from the summit of the craggy ground
The perching eagle oft was heard to cry,
Or on resounding wings to shoot athwart the sky.
One celebrated spot there was that spread
Its flowery bosom to the noonday beam,
Where many a rose-bud rears its blushing head,
And herbs, for food, with future plenty teem."

Instead of iron stakes, larch poles would last for many years, and could be made to suit the nature of the plant that was intended to be trained. Climbing roses could be supplied at a cheap rate from the extensive collections of the nurseries; and in places where the finer sorts of roses would not thrive, the double Ayrshire Roses would grow well, and if blended together, the dark velvety crimson of the Ayrshire Queen would contrast well with the creamy-white of the Countess of Leven, or the pure white of the Queen of the Belgians. Or if different-sized flowers were wanted, there could be the small neat roses of the Dundee Rambler and Bennett's Seedling, or the large creamy-white of the Splendens. These growing together, or in single plants, have a fine appearance when kept in good order.

Many of these hardy roses could be budded upon tall stems of the common briar, and however much some people may choose to differ on certain subjects, none, we should imagine, would, as far as the rose is concerned,

"Love it none the less
For growing in a wilderness."

Again; many lovers of the rose, wishing to make their garden gay with that delightful flower, purchase what are called *Autumnal Roses*, and if they are not careful in getting early varieties, it may be on the confines of winter before they have their plants in flower—and in some parts of the country they will not flower at all, unless the season be very fine; but even late and shy-flowering plants may be greatly helped, and beautiful blossoms may be had in places where they never were before, if the following simple plans were adopted. They refer chiefly to vigorous-growing plants, that make long shoots and produce some fine flowers, but late in the season: and those who possess them often wish that the roses were more numerous and their season of blooming more early.

Now, it is a common practice in many places, in order to keep vigorous-growing plants within proper limits, to cut the shoots nearly close to the ground, and next year a number of strong stems spring from the stock; but if last year's shoots are not yet cut, it would be better to select one of the strongest of them, and cut it off about four or five feet from the ground. The rest of the shoots may be cut as close as possible to the old stock, and the shoot that is left should be well fastened to a neat stake put into the ground. When spring commences, a number of buds will be pushing forth from the bottom of the plant and along the stems that were tied up; these should be all rubbed off when they make their appearance, except a few near the top of the stem; and as summer advances, strong shoots will be growing from the places where the buds were left. These must receive a check, in order that an early and an abundant crop of autumn roses may be obtained. One of the plans is, to put into practice what is called "balloon training." This can be easily done by fixing pieces of cord, or fine wire, between the top of the plant and some pegs fixed in the ground in a sloping direction, and training the young shoots along them. This method stops the rapid flow of the sap, and an abundant bloom is

obtained, and in many cases the roses will be six weeks or a month earlier than those that are left to grow in a rambling manner.

By such simple means the flower-garden may be greatly beautified and its fragrance enriched, "without the fervour and the force of Indian skies;" and with our eyes gazing with delight upon clusters of blushing beauties, we will be ready to say with our native poet—

" May'st thou, sweet crimson gem,
Richly deck thy native stem
Till some evening, sober, calm
Dropping dews and breathing balm,
While all around the woodland rings,
And ev'ry bird thy requiem sings,
Thou amid the dirgeful sound,
Shed thy dying honours round,
And resign to parent earth,
The loveliest form she e'er gave birth."

Another plan which we have practised for some years, and which answers the purpose very well, is, when the principal shoots are about two or three feet long, to tie a piece of small cord loosely towards the extremity of the shoot, then bend it gently inwards to the main stem of the plant, and fasten it with the cord to the stem. When all the shoots are regularly bent, the head of the plant has a globular appearance, and occupies less space than most of the plans recommended for retarding the flow of the sap; and by this method we also obtain a beautiful bloom of roses from plants that before this plan was put in operation seldom produced any flowers.

BEDDING CALCEOLARIAS, THEIR TREATMENT, AND A LIST OF A FEW CHOICE VARIETIES.

BY MR. JOHN BURLEY, FLORIST, ETC., ST. JOHN'S WOOD.

THIS useful bedding plant, with its numerous varieties, cannot be too highly prized by those who have a garden, and wish for showy masses of various coloured flowers; in fact, what have we to equal it as a bedding plant? yet, with all its beauty, it is not grown to that extent that it should be—there are to be found in gardens in general only a few varieties, such as a yellow, the old crimson, &c. Nurserymen and florists have only of late taken to hybridising them, and the few that have done so have met with very encouraging success. The greatest improvements that have been made in them this year, is a collection that was exhibited by Mr. Constantine, gardener to Mr. Mills, of Hillingdon; it consisted of eight fine varieties, possessing all the good qualities that should belong to a bedding Calceolaria,—viz., fine flowers, abundant bloomers, of close compact habit, and having that stout rough foliage which gives the plant such a lively appearance. Five of these charming varieties were quite distinct and novel from any I had previously seen, those I have marked thus (*) in the annexed descriptive list. There are also a few others that will be found very useful in the garden, and quite superior in all points to our old favourites. We now have a good variety in

nearly all colours; and I strongly recommend them to be planted in their varieties, each sort occupying one bed; they will then be found to give more satisfaction than most of our bedding plants, as they not only possess the superior quality of continual bloom through summer and autumn, but have the dwarf and compact habit, which, combined, render them unequalled as bedding plants. I have been asked by several friends how to propagate them so as to produce enough stock to form a bed. Now, I have an idea that a great many persons would grow them if they only knew an easy way of increasing and treating them through the winter. To obviate any complaint that may be made relative to their propagation, I here give the necessary directions, as well as of their general treatment throughout their various stages of growth. Supposing that a few good varieties are purchased in the spring of the year, and having one plant of each strong and well-rooted at the planting-out season, they should be potted into 32-size pots, and planted, or rather plunged, in the pots into the border, and, *of course, deep enough to hide the rims of the pots*. During summer, they will require only to be kept duly watered when the weather is hot and dry. In autumn, when frost is expected, they may be lifted out of the soil, the pots be cleaned, and, taking off any roots that have pushed outside of the pot, the plants may then be removed to a cool house or frame, and remain for a fortnight (*supposing they are taken out of the ground in October*); they must then be placed in a little heat, commencing that operation slowly, but increasing it until there is a temperature of about sixty degrees, which will be found quite sufficient to excite them to a growing state, which they will be found soon to do. Then the temperature of the house may be lowered a little, to allow of the young wood getting a little hardened; and when they are hard enough to bear the knife, and without being too pulpy to fog off, cuttings must be taken from these plants, cutting them off to a joint, and not too long; in fact, all that will be required on a cutting is the joint that is placed in the pot, and a heart or centre above the soil. When they are ready, they must be placed in a cutting-pot, prepared as follows:—Let the pot be half-filled with crocks, broken rather small, and on the top of that about two inches more of the siftings of the soil; then fill the pot with some good light well-sandy soil, finishing on the surface with the thinnest coat of clean silver sand. The pot will now be ready to receive the cuttings, which may be just plunged under the surface; let the same be settled down with a slight watering, and placed in a warm part in the house, with as much heat as may be in the area of the house, but by no means plunge the pots in *bottom heat*, as nothing is more fatal to them than bottom heat; they may be placed on a wood or a stone slab, or any cold bottom, and they will soon form their roots. Care must be taken to remove any leaves that damp off, as they will, if allowed to remain, destroy the cutting. As soon as they are rooted, they must be potted into small 60-sized pots, using the same sandy soil as for cuttings, and, being well drained, they may remain in the warm house until they form fresh roots, when they may be removed to a cooler one, or a frame. This is all the process required in propagating them. During the remainder of the season they will only need to be

kept clean, and moderately watered, until bedding-out season arrives; when the various varieties must be collected together, and planted in masses of the different colours, planting them at moderate distances from each other, but so close as to form a compact bed, and thereby ensure a good bed of bloom. But should the stock of any new varieties be short of supply for a bed, I advise them to have the plants potted, and plunged here and there in the borders, to ensure strong plants for propagating from for the following year's supply. The same rule may be applied to most varieties, and by selecting a few plants of each, and plunging them out in the borders, there is then a certainty of obtaining stock at the required season. There may perchance be some that read this who are very fond of a flower-garden, but have only one small house, and would be rather at a loss how to put in operation the above directions; but the difficulty is at once surmounted, if they have a common hand-glass. Then let the warmest and the most sunny part of the house be chosen, place the cuttings on a space sufficiently large to place over them the hand-glass. When the sun is out in the middle of the day, a shading of paper must be placed on the inside of the glass sufficient to cover the cuttings, when all the heat collected by the glass will be useful to aid in striking roots without making them flag. The shading may only be kept on for a few hours during the mid-day sun. By following the above details, a sufficient stock of plants may be *easily provided* for bedding purposes.

The following are a few of the best bedding varieties:

**Masterpiece*: fine large crimson, extra good habit, free bloomer, and a deeper richer colour than *Sultan*.

**Surprise*: large orange-crimson; fine flower, free bloomer.

**Superba*: orange and crimson, free bloomer, and compact.

**Amazon*: crimson maroon, rich and full flower.

**Loveliness*: good bright yellow, with a crimson blotch.

Mrs. Beecher Stowe: a good free-blooming pure yellow.

Model: rich brown, shading off to orange-yellow at the edges; good large flower; fine compact habit.

Magnificent: rich crimson, with a yellow cap; a large fine flower; free and good for bedding.

Crimson King: deeper crimson, and a great improvement on *Sultan*; robust habit, and free bloomer.

Brillante: bronzy-red; moderate-size flower.

Magnet: light brown, spotted with crimson, flower large, fine habit, and free bloomer.

Matchless: crimson self, a beautiful bright colour, and the best of the kind for bedding.

Golden Chain: fine yellow self; dwarf and fine.

Hero: a rich dark crimson; fine large flower.

Sultana: large yellow, deeply spotted in the throat; fine close compact growth.

Shankleyana: large orange crimson; fine for bedding.

Wellington Hero: golden yellow; free and good for bedding.

Candidate: rich orange yellow; free and fine.

Sultan: fine large crimson; rather a tall grower.

Tom Thumb: large rich crimson; good for pot culture.

Aurantia Multiflora: fine yellow; dwarf, and free bloomer.

Phæbus: orange, with crimson spotting; dwarf.

Kayâ: a good dwarf early yellow.

Gem: crimson self; small flower; but free bloomer.

The above varieties are all the best at present in cultivation that can be recommended for bedding, and as they embrace so great a variety in colours of their different shades, they will furnish quite novelty sufficient in forming the different masses required in the flower-garden. The five varieties first-named are quite new,—and will, we are informed, be sent out in the coming spring; the others are flowers that may be purchased at the various nurseries, at a small cost. A few of the last-named varieties have been in cultivation for some time; and at present there are no others of similar colours, habit, &c., to supersede them. When there are, I will furnish particulars of them.

BALSAMS IN THREE STYLES OF GROWTH.

BY MR. GLENNY.

It is very evident that there is a stir made in favour of this beautiful plant. The balsam is apt to draw, if it has heat, without sun; therefore it should not be sown too early. But, as they can be bloomed in a very short time, it is not uncommon to sow at three or four different seasons. In April to begin, May for the general show, June twice, for succession. Nothing suits the balsam better than a good deep frame, a well-made hot-bed, and the box filled up all but six inches with tan, so that the pots may stand near the glass; and if there be a good heat, the seed will be soon up. Sow the seed thinly and evenly over the surface of the pot, pan, or box used for the purpose, and sift or sprinkle the soil over, enough to well cover it. As soon as the plants are up, give air as freely as you can, without lowering the temperature below 60°. When they are strong enough, prick them out round the sides of pots, say two inches apart, so that there would be five or six in a four-inch pot, and more or less, as the pots are larger or smaller, it mattering but little what sized pot it is. Let the seed leaves be not more than two inches above the surface, and replace their pots in the hot-bed. As they grow up, sink the pots in the tan, to keep the plants from touching the glass; but keep them as near as possible, to allow a trifle for growing. When the plants have rough leaves, repot them singly in four-inch pots, lowering them into the soil, so that the first, or seed-leaves, be not more than two inches from the surface, for the stem below the seed-leaf will have lengthened. So long as the pots can be sunk in the tan to allow of the plant growing without actually touching the glass, so long must they be sunk, and after that the frame must be raised, or another hot-bed be prepared, to give more room. As soon, however, as the roots begin to form round the sides of the four-inch pot, they must be removed to pots of six inches diameter, and be still lowered if necessary; for as the balsam throws out new roots all up the

stem if it be sunk, the plant is improved rather than injured by sinking the stem; but the seed-leaf should be kept an inch above the surface, even after its last shift. Those who have stoves, and can place the plants close to the light, save the trouble of a hot-bed. As soon as the middle stem shows flower, we have to decide what we are going to do. If we want very large plants, we must pick off the buds as fast as they come, until the size we require is attained. If we want handsome, and not large plants, we only pick off the buds from the middle stem, until there are buds on the side shoots, and thin out, so as to leave buds, nearly of a size, an inch or two apart all over. Meanwhile, as soon as one pot fills with roots, it should be shifted for larger. If, instead of large plants, we only want to produce monster flowers, we should, as soon as the buds are forward enough, in the first instance, to show whether they are very double, pick off all but four or five buds on the middle stem, and let them flower; they will come as large as roses or camellias. But it is to be borne in mind, that the constant shift from one pot to another, as fast as they get filled with roots, must be attended to in all these methods of blooming them. The soil should be rich and light, and the watering regular, as they get dry. If you are always on the spot to see, they may be left till the leaves indicate flagging before they have water; but when they do, the soil must be wetted all through. They are the better for occasional syringing, but they ought not to be wetted when in bloom. The house or pit may be wetted, so as to throw a dew over them, but syringing would unquestionably injure the flowers that are opened. Balsams might be grown well in the open air. Make a bed eighteen inches deep, and let the soil be one-third in quantity of well decomposed dung, the other the garden soil; and if too stiff, mix sand with it. At the end of May, plant out those sown in April, and give them full two feet of room every way. Shade them from the hot sun when first put out, and they will grow even finer than half the potted plants.

[We saw Mr. Glenny's large collection of balsams at Fulham when in full bloom, and the superb-grown, robust specimens, with *extraordinary-sized* double flowers, very far exceeded any others we ever saw either in private establishments, nurseries, or at the floral exhibitions. Mr. Glenny, we see by advertisement, disposes of seeds from this celebrated collection.—Ed.]

TREATMENT OF CYCLAMENS.

BY THE FOREMAN OF A LONDON NURSERY.

NOTICING that a reader requests information on the management of these pretty blooming plants, I beg to inform the lady, that if by the sweet-scented *Cyclamen* she means the common *Cyclamen persicum*, white with a crimson eye, it is so easily cultivated, that the wonder rather is how she can have so mismanaged, without killing it, as to prevent it from flowering for three years. To grow it in perfection, the root should be placed just on the surface of a compost of equal

parts of sandy loam, leaf-mould, and rotten cow-dung, in a well drained pot, which diameter is about double that of the root itself, and placed in a light and airy situation, where it has little more than protection from frost. When it dies down, about June, the plant should be set aside in a cool place without water till the end of August, when it may be replanted as above. I have found the following plan answer well too. Soon after the plants die down, I turn them into the open border, and allow them to remain until the nights begin to be chilly, towards the end of September, and by this time they have made both leaves and flowers buds, which soon expand, when the roots are taken up and potted as above. If the plants are kept in a close damp or dark place, they will *never* flower.

The directions above apply nearly to all the genus, except that *C. coum* requires *peat*, and *C. repandum* is rather difficult to keep when dormant, and requires more air. The common sweet-scented Cyclamen, of South Europe, a rose-coloured species, prefers more sandy leaf-mould, and will bear anything except frost and a wet soil. It grows profusely in the Italian Islands, on the mossy banks which bound the vineyards. The new *C. macrophyllum*, with its immense large leaves and fine flowers, is easy of cultivation; it requires a compost of equal parts of peat, loam, and well rotted cow-dung,—in that it flourishes admirably. It merits a place in every greenhouse.

PROPAGATION OF CITRON, LEMON, AND ORANGE-TREES BY CUTTINGS.

BY MR. WILLIAM CLARKE, MARWOOD-HOUSE GARDENS, LANCASHIRE.

I beg leave to communicate to you my mode of propagating the Citron, Lemon, and Orange, and which I have practised for many years with great success, hoping it may be of service to some of your subscribers. I do it from single eyes with a leaf attached to each; I immure the eye in the mould about half an inch deep, and they begin to make roots *very soon*, sending up a *strong shoot* at the same time. I have stuck fifty to a hundred in a large-sized pot, and scarce one of them failed, and of course a plant on its own bottom is preferable to a plant introduced on another stock, particularly so when dwarf bushes are desired. And I find such bloom and bear fruit in much greater profusion than the budded or grafted plants do. When potted, they should be watered liberally, and introduced into dung heat, and shaded. I find they strike most readily in a cucumber-bed, the pots plunged to their rims. The compost I generally use is rich loam and rotten dung, the pots well drained, and about three inches of soot at the bottom of the pot; if a little old mortar so much the better. I also find the *Dahlia* strike very freely from single eyes, and much the best mode for summer propagation when you wish to propagate valuable seedlings, as they make strong plants by autumn. I also find *Begonias* strike freely by the same method.

ON THE BIGNONIA VENUSTA.

BY JAMES SIMPSON, OF RUFFORD-HOUSE, NEAR NEWPORT.

BIGNONIA VENUSTA.—This very beautiful flowering hot-house climber well merits a place in every stove; scarcely any flower can equal its beauty and comeliness when in bloom; and those of the readers hereof who have not seen it growing, but have beheld its clusters of flowers in the shops of the central avenue of Covent-garden during autumn, winter, and spring, can confirm this testimony of its merits.

It is easy of cultivation, and if allowed to extend its roots in a bark pit, or in a border that derives warmth from some source, it grows *vigorously*, and will bloom in profusion, its charming, long, tube-shaped blossoms, borne in pendant clusters of from six to a dozen in each, are strikingly handsome. I have a plant growing in the corner of a bark pit, in a wooden case, with holes at the sides, out of which the roots push, and the branches are trained to a wire framework which is upon the front wall of the pit, the entire length of the house, and from October to April it blooms beautifully. I find it blooms better when trained crossways of the house than when *up the rafters*. I cut in the shoots after they have done blooming, so as to leave each about six inches long, give the plant rest by withholding an over supply of water, and remove the bark from the side of the case, about two-thirds its depth, sliding down another piece of wood in front of the case, which leaves a space of an inch, and keeps the roots from being heated by the bark; but early in August I remove it, water freely, and push the bark to the case; the plant soon pushes, and giving it manure water every fourth watering of the soil causes it to grow vigorously and bloom in profusion. The flowers are of a handsome yellow-buff colour.

It is easily increased by cuttings of the young shoots when about five inches long, inserting them in equal parts of silver sand and loam, and plunging the pot where it will have a gentle heat.

I have seen plants flourish admirably when grown in a bed of soil in the stove, where the roots had a small degree of warmth. Also grown in a large pot, and trained *round* a pyramidal-shaped wire frame, the pot being placed upon a wooden trellis which was on a warm flue. One plant I recently saw that had been planted in a border in a stove but three years, which, being regularly trained, covered a space of 600 superficial feet against the trellis of a back wall, and was literally laden with its clusters of flowers. It ought to be grown in every stove, warm conservatory, or greenhouse. It can be procured, too, at a trifling cost.

HINTS WORTH THE ATTENTION OF CULTIVATORS OF FLOWERS.

BY A BOTANIST.

AND first, in reference to those *principal parts* of a plant, the root and leaves. By aid of the root alone it is that a tree or any plant is enabled to keep its right position in the ground; and the more the

head spreads, so much more do the roots : so that, in fact, there is kept up a kind of balance between the part above and the part below ground. Again, it is from the roots alone that the plant looks for sustenance, for it is not enabled to do as we or other animals can, run about to seek our own wants ; but as it is stationary, so it depends upon the roots and its spongelets for drawing to it all the nourishment that can be found within its reach. Again, roots perform the office of throwing out all the parts taken in by them from which no nourishment can be derived. It is a singular fact, that they are just as careful and anxious to avoid the light as the leaves and young shoots are to turn to it. But the leaves are nearly of as much importance to a plant as the roots, for until the bud has actually burst into leaf no growth can take place ; and when the leaf is formed, it is there that the sap is turned into pulp. In the *dark*, leaves, like our lungs, take in oxygen from the air, and part with a portion of the carbonic acid gas contained in the sap. In the *light*, the sap on the upper surface of the leaf parts with the oxygen contained in the carbonic acid gas, and as the oxygen goes off, the carbon remains, while the sap, previously little less fluid than water, is converted into a sort of pulp, a considerable portion of which consists of carbon. The high importance of leaves becomes thus manifest ; and nothing will more enfeeble a plant than taking off its leaves in the growing season, though they are no longer necessary during the cessation of growth in the winter. And we must bear in mind that their fall previous to winter is not caused by cold, but in consequence of the vessels at the root of the leaf-stalk becoming gradually rigid, so as to prevent the rise of sap, or at least the return of pulp.

And now I shall proceed with such things as tend to give life and health to plants ; namely, atmospheric air, carbonic acid gas, and humic acid, not forgetting one principal support, water, which is composed of two gases, oxygen and hydrogen, which it appears plants have the power of decomposing. The more water is mixed with the air when given to plants, the more beneficial it is to them, because it is by that means enabled to obtain large portions of those gases necessary to their life ; hence the smaller the holes in the rose of a watering-pot are, the finer the water falls on the plants, and the more atmospheric air it is enabled to obtain ; it is this alone which makes river-water, when running a long course, better for plants than that which has been motionless for a long time, such as ponds and lakes, whose waters only contain a small portion of air ; but this does not apply so well to actually stagnant water found in ditches, &c., whose deficiency of atmospheric air is made up by the greater portion of carbonic acid derived from decaying animal and vegetable substances found generally in such places.

If plants could live without a *constant* supply of water, then rain would, even during the summer months, be a sufficient support to them, as its passing through the air causes it to give more nourishment than we can ever give by the use of the watering-pot or engine. The air itself always contains more or less water in the shape of an invisible vapour, which is always in proportion to the temperature ; the warmer the air, the more moisture it contains.

Carbonic acid gas is another important thing to the life of plants, and is found in great abundance in all animal and vegetable substances in a state of putrefaction, which, if mixed with the soil, will be taken up by the spongelets of plants, and is passed into the main body; otherwise what would be the use of applying dung to plants, which of itself contains a great deal of carbonic acid gas? Carbonic acid is heavier than air, and, consequently, when any rain falls from the carbon being close to the earth, a great quantity is washed into the soil.

To describe what any of the gases are would be beyond my purpose, and the limits your work could give; so that I shall not attempt to enter more minutely upon them, and, therefore, proceed to the only acid of itself beneficial to plants,—viz., humic acid, which may be found in great abundance in the water which drains from a dunghill; but it is better generally not to apply it to plants without diluting it, as sometimes, from salts contained in the dung, it proves injurious. As it flows upwards it becomes thicker, and in fact that is the only difference between it and water, excepting some small matter collected before entering the plant; as it rises it passes into the leaves, where, on the *upper side only*, by the action of light and heat, it is turned into pulp, and, passing into the leaf-stalks, and so into the root, throws out the refuse material, from which no nourishment can be derived.

THE PLEASURE-GARDEN OF BLOSSOMING TREES AND SHRUBS.

BY CLERICUS.

In my remarks upon a pleasure garden of blossoming trees and shrubs, I have nothing terrible to present to the reader; but attempt to

“Show Nature's form in smiling beauty drest,
And call mankind to view her and be blest,”

and which I hope at *this season* of the year will tend to produce pleasurable sensations only. To me it seems hardly possible for any mind to be so debased as to be insensible to the effects of those vegetable charms, which ought to become more endeared to us as our age and reflection increase. A more delightful cabinet of natural history can scarcely be formed than this garden affords, even when unadorned with exotic beauties. It offers matter for contemplation of the most agreeable kind which varies still as seasons revolve; and as every tree, shrub, and herbaceous plant has its peculiar inhabitants, we have at the same time a collection of musical animals and vegetable wonders there, that are sufficient to occupy all the leisure which our economical duties allow us. As years increase, a taste for most pleasures in general diminishes. Those of the court become fatiguing, the charms of the table appear to lessen, but the fondness for a garden increases, and is almost the only *earthly* pleasure that does increase. Let us not, then, neglect to cultivate a taste for what will form the delight and amuse-

ment of the latter period of life. Every tree, or shrub, or flower, we plant adds to the entertainment we prepare for future years, for ourselves, our friends, and successors.

The introduction of a useful or an ornamental plant into our island is justly considered an important service to our country ; for it is impossible to calculate on the benefits that may be derived through such means, when the qualities of the vegetable are ascertained, and their virtues known. Even what is introduced and planted merely from curiosity or ornament seems to unite us to the nations from whence it comes. It bestows on us a share of the blessings of other climates, and affords us a portion of the smiles of a more genial sun. When, therefore, we dwell on the beauty of exotic trees and shrubs, we wish to be understood as expressing our gratitude to those who have enriched our land with additional charms, and more fully displayed Nature to our eyes, and not as disregarding the plants that are indigenous to our soil. I am aware that many an Englishman has sighed under the shade of the banana for a sight of his native banks, where the primrose sparkles through the hazel-hedge, and the violet peeps so modestly. The plants of our country recall the idea of it in the most forcible manner wherever we meet them. They are often the first objects that attract the attention of those who have been long absent from their native fields, and who, on their return, pour out the genuine effusions of joy on beholding the village-elm, the well-known oak, or the unchanged yew, whose antiquity is equal to the church it shades. We are told of a young Indian Pontaveri, from Otaheite, who in the midst of the splendour of Paris, regretting the simple beauty of his native island, sprang forward at the unexpected sight of a banana tree in the Jardin des Plantes, embraced it, while his eyes were bathed in tears, and exclaiming with a voice of joy, "Ah! tree of my country!" seemed, by a delightful illusion of sensibility, to imagine himself for a moment transported to the land which gave him birth.

We seem, as it were for an instant, to go back to the delights of infancy, when, on each succeeding spring, we visit the meadows covered with cowslips, which afforded us so many happy hours in childhood, as we formed balls of their blossoms. Then the playful girl, bedecked with wreaths and necklaces of daisies, led her little swain in chains formed of the milky flower-stalks of the dandelion ; but who at the sight of a butterfly burst the brittle bonds, and scampered away, to return, perhaps, a few years after sighing, in fetters not so visible, but more binding.

There is no part of Nature's works more interesting than flowers. They seem intended for the embellishment of the fair, and for the ornament of the spot where they tread. Their sweet perfumes have such influence over all our sensations, that in the midst of flowering plants the most acute grief generally gives way to sweeter feelings. When our home and domestic companions are encompassed by the pretty garden, our situation approaches nearest to a *terrestrial* paradise. Is it not, then, to a rational mind a source of inexhaustible delight and instruction, where each season brings new joy, and every morning a fresh harvest of delightful sweets? Subjects for new thoughts and con-

temptations present themselves to our view, and even the most dreary months still supply cause of admiration, and discover a world full of wonders; for

"E'en Winter oft has seen it gay,
With fretted frost-work, spangled o'er,
While pendants droop'd from every spray,
And crimson budlets told once more
That Spring would all its charms restore."

It is not to advanced age alone that the garden offers its placid delights. Every stage of life, from the cradle to the grave, is attracted by its charms. The infant is ready to spring from its nurse's arms, allured by the gay colours which flowers exhibit.

They form the most innocent toy of childhood, and the cultivation of them is generally its first labour, whilst their presentation often explains the passion of youth. The happy maiden loves to entwine them in her locks, and the fond parents delight to see their child mimic their beauties with the pencil.

The representation of flowers is the proper style of drawing for the softer sex. Flowers are the peculiar province of the fair, and the nearer their imitation approaches to Nature, the more it delights us; which paintings of massacres and agony certainly cannot. The beauty and grace that may be displayed in grouping flowers, united with the gaiety of their colours and the harmony of their tints, are well worthy the attention of those who were born to render life delightful. The neatness, nicety, and patience required in finishing flower-pieces, seem to demand the delicate hand of a female artist.

The description, by Moses, of the garden of Eden, the first abode of first-created man, formed the outlines which Milton has so splendidly enriched with all the imagery of poetry. From this have been copied the plantation, the park, the shrubbery, and flower-garden, so justly the pride of the nation, and so properly the abode of its beauty. The Greeks devoted their terrestrial groves, as well as their celestial gardens, to the gods; but the Mahometans reserve their flowery lawns and umbrageous bowers for scenes of future bliss to mortal believers. We, however, more prudent, should wish to collect all such blessings, which bounteous Nature has scattered over the globe, and in this present life form a modern garden worthy and deserving of our constant admiration.

(To be completed in our next.)

MODELS OF FLOWERS IN WAX.

BY MADAME MORIEN, OF PARIS.

DURING the last seven years I have been a monthly purchaser of two numbers of your useful Magazine of flowers. Noticing that a correspondent asks for instruction on the constructing of wax models of flowers, I send particulars of the process I have pursued (being a dealer in such productions of most of the finest flowers, and dispose of many thousands every year) most successfully for ten years, hoping the details will meet the requirements of the lady inquirer.

I have therefore to state, that it is requisite to have a piece of wire,

about three inches long, pointed at one end, and with a round knob of sealing-wax, about a quarter of an inch diameter, at the other, so that it resembles a very large pin, and three or four small smooth rods of wood of different sizes; these, with a penknife or scissors, are the only tools; have also some very thin tin or brass to cut up into patterns, some wire of different sizes covered with silk for stems, and some sheets of wax of requisite colours; thus furnished, set to work. Take a natural flower, as, for example, a Primrose, which consists of a green cup or calyx, inside which are five petals, or straw-coloured flower leaves, and in the centre five stamens. Pluck the flower to pieces, and after flattening each part either by putting it between the leaves of a book, or under a warm flat iron, cut out of the thin tin patterns exactly similar to the calyx (allowing here a little to fold over when bent afterwards to the proper shape) and one of the petals; then laying those upon the wax lengthwise of the sheets, cut out the calyx and the five petals. Take a piece of proper-sized wire for the stalk, and cut five narrow thread-like strips of dark yellow wax for the centre, which fix on the top of the wire by the hard pressure of the thumb and finger; these being on regular and firm, fasten on one of the petals in the same manner by pressure; then a second petal, a third, fourth, and fifth, putting them regularly round and bending each where it joins the stem outwards, so that when completed the flower shall be flat. If the wax should be brittle, hold it in the palm of the hand for a minute; the warmth of this will render it so pliant as to yield readily to any pressure given to it. The petals being fixed, warm the calyx by the hand, and form it into a proper shape on the end of one of the little round and smooth rods of wood before mentioned; slip it on by the lower end of the stalk, and when in its proper position pinch it tightly round the end, which will fix the whole together, and the flower will be complete, except a few touches of a darker yellow near the centre, on the petals; this may be done either with oil colours or water-colours mixed with ox-gall.

All this is easy; and there are many flowers that require no more care than this; such, for example, as the Violet, the Snowdrop, the Crocus, the Polyanthus, the Narcissus, the Hyacinth, the Tulip, the Laburnum flower, the Pink, &c. In some of these, however, there are several florets; each must be made separately, and the thin wires of each tied together by green silk.

The petals of the Ranunculus and Tulip are hollow; so they are in the Rose, and usually in the Crocus; their shape is given to them easily by the finger thus—hold the wax petal in the hand till it is pliable, then roll the central part of it with the sealing-wax end of the wire pin, which will, of course, expand it somewhat; then press it with the point of the fingers into the hollow of the hand, which will make it of the requisite concave form. Sometimes the petals should appear rough and corrugated, as in Holyoak, the Gum-cistus, and the red Poppy; roll it well so as to be very thin and warm; then crumple it up somewhat by the hand, and open it out into its proper form again, when, if done well, it will be ready for use. If a part of the flower resembles a cup, as the centre of the Narcissus, it must be formed with the pin as before, the

piece of wax being of the size of the cup when cut open. In making a *Convolvulus*, it would be in vain to attempt forming it out of a round or flat piece of wax; the original flower must be cut down on one side, then laid out to flatten, the wax cut of the proper size, and folded carefully over a mould which has been soaking in milk-warm water, the mould previously made by pouring plaster of Paris carefully into a real flower of the same species. Some persons make the *Convolvulus* flower in five sections, and putting these on the mould so that the edges unite, join them together very carefully, and hide the joint on the inside of the flower by placing over them five strips of wax differently coloured, to imitate the rays seen upon the disc; but I pursue the former mode.

Dahlias, *Chrysanthemums*, and other flowers that are quilled, that is, have their petals bent in at their edges, must have each separate petal rolled by one of the sealing-wax knobs, as for other things, and while warm, the edges bent or rolled up with the fingers into proper shape.

A large *Dahlia* requires about seven sheets of wax, and requires petals of five or six sizes for different parts of the flower, and in the centre of it a lump of green wax, made of the refuse species, of about half an inch in diameter. Roses, and other delicately-tinted flowers, are mostly made of white wax, tinted by powder colours, put on with a short-haired, rather hard brush, such as is used for oriental tinting.

Flowers that are party-coloured or streaked must have the streaks painted upon them. Single flowers will require stamens in their centres; these, if very small or so hidden as not to be conspicuous, may be made of narrow strips of wax of proper colour, which will be much improved in appearance if, when fixed, the ends of them be dipped in gum-water, and fine crumbs of bread, mixed with turmeric, be sifted upon them. If the stamens are large, they must be formed separately upon fine wires, by moulding between the thumb and finger some of the refuse wax of proper colour, dipping each afterwards, if necessary, in a powder of the natural colour, as, in dark yellow for the Lily, black for the Tulip, &c. The leaves that are attached to the various groups are almost all of cambric, the manufacture of the artificial flower-makers. Any other information which may be required, and I can supply, I shall have pleasure in giving.

ARRANGEMENT OF BEDDING PLANTS TO PRODUCE THE BEST CONTRAST IN COLOURS.

BY ADELAIDE, OF SOUTH MIMMS, HERTS.

To demonstrate the theory of colours, a circular card may be divided into seven compartments, by lines drawn from the centre to the circumference, one compartment being painted red, the next orange, the third yellow, the fourth green, the fifth blue, the sixth purple, the seventh violet. Let water-colours or patterns of ribbon, of each of these respective colours, be procured, and arranged in the enumerated order. It will be found, that any one of these colours is producible, by due admixture of the two adjacent colours. The first and third, red paint mixed with yellow, produce the second colour, orange. The second

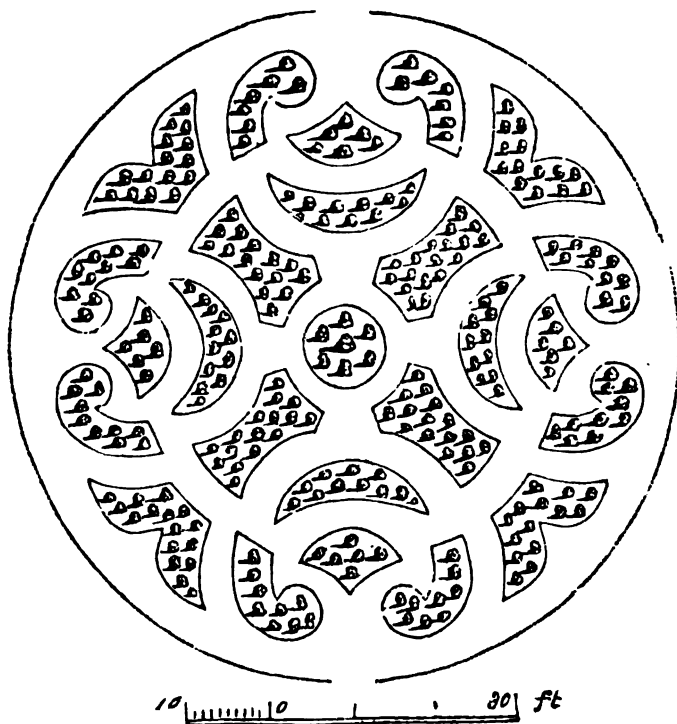
and fourth, orange mixed with green, produce the third, yellow; the third and fifth, yellow and blue, generate green, the fourth colour; that and the sixth form the fifth, blue; the fifth and seventh, violet, create the sixth, purple; the sixth and the first, red, constitute the seventh, violet; the seventh and second, orange, terminate in the first, red. What, then, is the necessary conclusion, but that in the order of prismatic colours, adjacent colours are inharmonious; and that harmony results only from union of two colours, distant in order by one intermediate tint. The principle productive of harmony being thus discovered, may receive confirmation, by experiment with ribbons of different colours blended, or with sewing silks twisted, in the preceding order of arrangement. Yet, beauty resulting not only from harmony, but also from contrast, the next inquiry is, from what principle to produce the latter effect. It is discoverable from the following experiment. To patterns of ribbons or silk, of the seven preceding colours, let white and black be added; and all be placed in a perpendicular line, the white above the red, the black beneath the violet, adapting the numbers to the altered arrangement, the white being denominated one, the red two, and so on, the violet being marked eight, and the black nine. By advancing black to the side of white, or as it is accounted the absorption or absence of all colours to the accumulation or presence of all, the strongest possible contrast is produced. Violet and purple will also contrast with white, in decreasing ratio; while the remaining colours produce a very inferior degree of contrast, by no means eligible from their approximation to white, in graduated reflection of light. On a similar principle, the best contrast to black, next to white, is red, as the colours ranking first of the seven in order of refraction, therefore first in power of reflection; orange is an inferior contrast, but yellow, blue, purple, or violet, from graduated absorption of light, present no contrast to its entire absorption, black. In the same manner red receives no contrast from the two nearest colours in the prismatic gradation, orange or yellow, but from the semi-colour green; it admits the lowest contrast in blue, higher in purple, or violet, and the highest, as already remarked, in black. The decisive inference then is, that contrast is not producible without passing over two prismatic colours at least. Such being fixed laws, constituting the primary principles of the theory of colours, and demonstrable by experiment multifarious and conclusive, their application to landscape gardening and the disposing of flowers in the flower-garden, &c., involves not the slightest difficulty, and solves numerous phenomena. Why, for instance, does verdure, or why do shrubs, supply the best relief to gaudy flowers? On account of excellent contrast, green being a sober colour intermediate between the deeper and brighter tints, consequently affording a foil to all. Why is snow injurious to the effect of foliage, or flowers, of every graduated tint? On account of its glaring whiteness, supplying neither contrast nor harmony, white entering into the composition of every shade of tint, and particularly being productive of semi-colours; consequently, being a component principle, when uncombined it can neither harmonise nor contrast with itself. Why does the olive tint of the expanding oak-leaf offend the eye of taste? Because, its being composed of green

in combination with yellow, the component principle can neither harmonise nor contrast with itself, in a simple uncompounded tint, in the surrounding grass, or foliage of more forward trees. Why does the verdant herbage of spring produce inferior picturesque effect, in grounds ornamented with trees, than the sterile grass of early autumn, consequent on mowing? Because, spring grass and foliage are gradations of one and the same colours; consequently, in whatever variety of gradation, the diversified tints of any colour, neither harmonising nor contrasting, cannot possibly be productive of picturesque effects. Contrariant is the effect of sterile grass, on account of its russet tint, like ripened corn, presenting advantageous contrast; russet being a semi-colour, uncompounded of green. Countless natural phenomena, with their solutions, might be multiplied, illustrative of the theory of colours being of practical utility to those who are accustomed to ornament the flower-garden (in whole or part) on the bedding system, and desirous that the best effect be produced.

In another Number I shall have more to state on ornamenting the flower-garden.

PLANS OF FLOWER-GARDENS.

No. 13.—By T. RUTGER, Esq.



The circular design, herewith presented, is intended for a lady's parterre, supposed to be laid out on a secluded lawn, and approached through a shrubbery, so as to render it private for those who may prefer seclusion. A rustic covered seat, or two, might be placed in the shrubbery adjoining, to afford shelter or shade.

The beds are supposed to have box, or some other material, for edgings, with gravel between.



ANNUALS.—If seed was omitted sowing in autumn for early blooming plants next spring, now sow some in small pots, place them in a frame free from frost, and turn out into beds, &c., early in April. Sow *Auricula* and *Polyanthus* in pans, and place in a shady part of a cool frame. Prune *Roses*, and sprinkle the heads over freely with soot and lime liquid, as it will destroy moss or insects, and preserve them from the ravages of such enemies in summer. Plant *Roses* and *Hollyhocks* immediately, or they will not bloom well this season. *Carnations*, &c., in pots must have air liberally; if attacked by mildew, dust over and under with sulphur, also protect from severe frost and excess of rain. Prepare compost for the show-plants to grow in. *Pinks* and *Pansies* in beds must have the sod pressed closely round the main stem, and a number of sticks be pricked among the shoots, or they must be secured by pegs, so they are not twisted by the wind. A low hedge, formed of yew or fir branches along the sides will also be beneficial as a protection from wind. *Pinks*, *Carnations*, &c., sprinkled over with soot, will preserve them from hares, rabbits, and snails. *Tulips* and *Hyacinths* in beds protect from severe frost; an inverted garden-pot will do. Also protect the bed of *Ranunculus*, *Anemone*, &c., which were planted in autumn. *Gladioluses* to succeed the autumn planted should now be planted; they will bloom to the end of autumn. *Verbenas* guard against damp, mildew, &c.: dry air and dust, with sulphur, attend to. *Tulips*, have the soil closely pressed around the plant. *Fresh loam* must be added to all flower-beds; it promotes an abundance of flowers; also give well-rotted manure or leaf mould. Divide large plants of the herbaceous class of the borders, replant, &c. *Shrubs*, layers of most kinds may now be made. *Lobelias*, of the erect growing class, must be guarded from an excess of wet; but towards the end of the month place them in a rather warmer situation, and gradually encourage the offsets to grow, in order to divide and pot singly in February.

IN THE FORCING STOVE.

In order to have early, or very large plants of *Cockscomb*, *Globe Amaranthus*, *Balsams*, *Salpiglossis*, &c., sow seeds by the middle of the month; also a portion of *Ten Week* and *German Stocks* in pots or slight hot-bed; also other handsome half-hardy kinds or flowers to bloom early. *Amaryllis*, *Sprekelias*, &c., now repot; also begin to push, (*gradually*) for *early bloom*, some of the *Achimenes*, *Gloxinias*, *Gesneras*, &c., and pot singly when the plants are an inch high. *Bedding Plants*, any that have fresh shoots, and plants are required of them, take off cuttings, strike, &c.; or place the old plants in higher temperature, to push them into growth, such as *Fuchsias*, *Salvias*, *Heliotropes*, *Anagallis*, *Hemimeris*, *Cupheas*, *Geraniums*, &c. The *Bouvardias* are best increased by the roots; cut them into pieces an inch long, and cover them half an inch in silver-sand, place them where they get bottom heat, and they soon push shoots; then pot singly. Sow *Mignonette* in pots for early bloom. The autumn-sown plants must have only *dry* and *mild* air.

IN THE GREENHOUSE, &c.

Never give fire-heat to *Ericas*, as long as you can preserve them from frost, and except in *very windy* or *foggy* weather; let them, as well as *Epacris*, *Azaleas*, and indeed all the class of *New Holland* plants, have a free supply of air, allowing the gentle winds to blow upon them. Let *watering* be done in the *morning*, so that *damp* may be dried up. Damp must be guarded against; apply a gentle fire to dry it up, if not otherwise done. *Cinerarias* repot, fumigate, if one green fly appears; use sulphur if mildew attack. *Fuchsias* now prune in, and repot the large plants which are required for early bloom. *Tropæolum tricolorum* and the other *tuberous-rooted* must now be potted. *Camellias*, keep the entire ball of soil regularly moist, or the flower-buds will drop: thin the crowded buds. Pot *Alstroemerias*, *Ixias*, and *Oxalis* with any other greenhouse bulbous-rooted plants. *Pelargoniums*: now spread the branches outwards, in order to properly form the plant, bringing some as low as the rim of the pot. Cuttings of *Azaleas* strike root much more freely early in the spring than later on, therefore *now* place in a gentle heat any stock plant, in order to obtain the *half-ripened* shoots by the proper period, such being best for rooting in silver-sand, with bottom heat.

MISCELLANEOUS SECTION.

THE OLD DOUBLE YELLOW ROSE.—Complaints have often been made, that the flower-buds either drop off just before the time they should open, or if they expand, the flowers are defective in form. Now, I have a large plant in my garden, which has bloomed in *perfection* every season during sixteen years, without having one defective flower. The plant grows in a good loamy soil, about half a yard deep, upon a rocky-stone bottom. It was planted in the year 1830; but previous to my possessing the premises, it had been neglected as to any pruning, and was in a *wild state*. I had it pruned, and trained to the south aspected wall, at the foot of which it was growing. I cut away all the foreright shoots, that could not be brought against the wall, and thus thinned in November, I had it arranged, and at the same time gave the

border a good dressing of old rotted cow-manure. This addition of manure in November I have continued ever since. When the shoots pushed the following summer, I treated the plant the same as is done with the Peach-tree; namely, rubbed off or cut clean away all extra new shoots, retaining as many as would duly furnish the plant with new wood, like the Peach-tree, and they were properly secured to the wall. The following November I pruned back these new shoots, to about half their length, and the *new* shoots which pushed from them supplied me with a profusion of fine Roses. This kind of summer and winter regulation I have practised for sixteen years, with perfect success. The plant covers a space of brick wall eight yards long by ten feet high, and blooms in every part of it. I have a basin formed (five feet each way from the stem) with the surface soil, and lay six inches thickness of good (somewhat mulchy) stable-dung; and upon this I pour, once a week, or in very dry weather twice, as much *soft pond-water* as will sink to the depth of the border-soil. By this attention, I am amply repaid by the fine display of a profusion of its rich yellow double flowers. It is easily increased by layers. I have a plant in the open ground, grown as a bush, and I have raised great numbers by this method; and when rooted, I pot them, or plant in the open warm border. I have sold or given hundreds of plants.

BRIEF REMARKS.

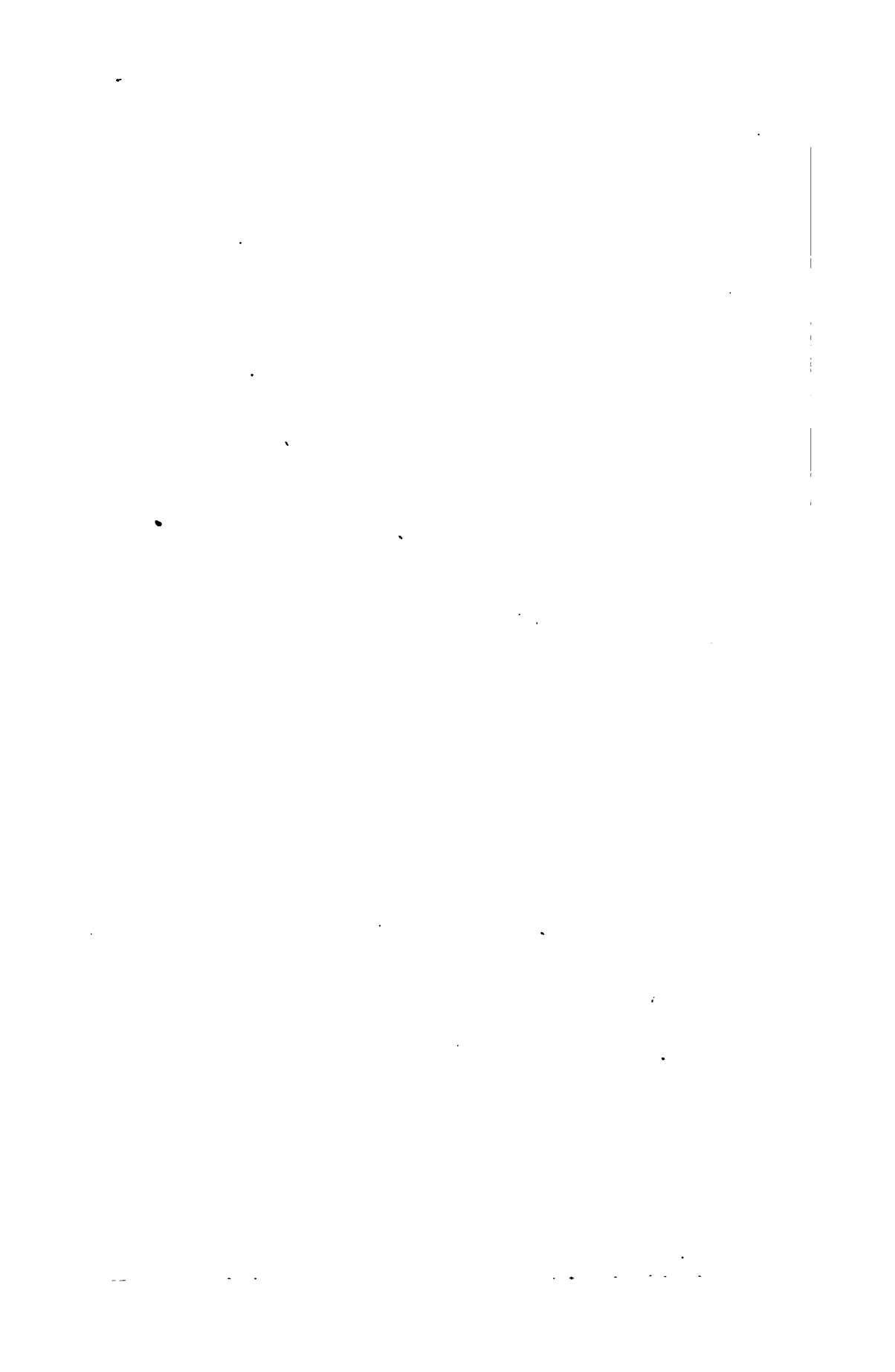
HORTICULTURAL SOCIETY MEETING, Dec. 6th.—This was what is termed the Chrysanthemum show-day. The following were the best collections:—The best was a group of Pompones (or Minimas) from Mr. Robinson, gardener to J. Simpson, Esq., of Thames Bank, Pimlico. As regards good cultivation, nothing could possibly surpass the varieties shown, being in perfect health, dwarf and bushy, and literally covered with bloom. The sorts were Mignonette, brownish-yellow; Daphne, purple; Nelly, white, with a yellow centre; La Gitana, bluish-white; Atropos, brownish-red; and Drine Drine, yellow. A Knightian Medal was awarded. A second collection of large flowered sorts came from Mr. Gifkina, gardener to P. Johnson, Esq., of Church-street, Stoke Newington. It consisted of extremely large plants, which, although showy, were what gardeners term "leggy," and also very much sticked. The kinds were Phidias, General Negrier, Christine, Pilot, Annie Salter, and Madame Camerson. A Banksian Medal was awarded. Messrs. E. G. Henderson, of the Wellington-road Nursery, St. John's-wood, furnished a group of Chrysanthemums, but they arrived too late for competition. The most remarkable among them was perhaps President Decaisne, a reddish-brown sort, with a light centre, the two colours in the same bloom, producing a charming contrast. Marcian, a medium-sized kind, with pink petals, fading off at their points to white, thereby giving the flower the appearance of being striped or mottled; Jonas, a small-flowered sort, with reddish-brown petals, tipped with yellow; and Mdlle. Angelique Richard, a medium-sized sort, with compact heads of flowers, nearly white in the centre, with a pink rim round the circumference of each bloom, and altogether very pretty. Messrs. Chandler, of Vauxhall, sent a collection not for competition. It consisted of Alveoliflorum, Justine Tessier, Junon, La Fiancée, Daphne, Fenella, Graziella, La Rousseé, Mignonette, La Sapagon, Atropos, and Nelly. These were fine kinds of Pompons. Mr. Spary, of Brighton, sent a plant of Queen of Gipsies, with a view to exhibit a peculiar mode of training, which, when carried well out, as in the present instance, has a neat effect. Mr. Spary stated that the plant was struck in March last, in a 3-inch pot, and had been kept in a cold frame till the end of April, when it was shifted into a 6-inch pot, pinching the top off and exposing it to the open air. In June it was shifted into an 8-inch pot, when training was commenced by placing a horizontal wire trellis on the pot, so as to project about six inches beyond the rim, dividing the shoots, and leading the longest to the outside, keeping the next lengths to fill in between, and the shortest for the middle. These were tied as they progressed every week, until July; then each of the

shoots was topped, and as soon as the plant began to break it was again shifted into a 9-inch pot. When the laterals were long enough, they were then regulated and tied, so as to fill and form the plant until September, when the centre shoots were allowed to turn up, keeping the outside ones tied down a fortnight longer, to make them shorter, so as to make the plant assume the form of a cone. When it was set for bloom it was again shifted into a larger pot, to strengthen the flowers and prolong its growth. The plant was then removed to the greenhouse to bloom. The Pompon varieties are admirably calculated for this style of growth, but they require autumn-struck plants to carry the plan out to perfection. Plants managed in this way are dwarf and compact, and very suitable for front shelves or table stands in conservatories or greenhouses.

THE STOKES NEWINGTON CHRYSANTHEMUM EXHIBITION FOR 1853 was held on November 17th, and the numerous company of visitors were highly gratified with the well-grown plants and the superb-cut blooms shown, more especially so with the beautiful Pompons (or Minimas). Mr. Robinson's plants of this class were very superb specimens, being nearly two feet high, clothed with fine foliage down to the rim of the pot, and each of the bushy plants about two feet through, adorned with a fine display of their lovely little flowers. Of the large-flowered class Mr. James's plants were most superbly grown, and the flowers, in size, like small Double Dahlias, highly meriting the award bestowed. The judges awarded prizes to the following:

Six *Plants*, in 11-inch pots: 1st. Silver Cup.—Mr. James, Stoke Newington, with Pilot, Mount Etna, Christine, Defiance, Madame Cameroun, Queen of England. 2nd. Mr. Scruby, Mount Etna, Defiance, Annie Salter, Vesta, Christine, Queen of England. 3rd. Mr. Holmes, Hackney, for Defiance, Christine, Mount Etna, Annie Salter, Vesta, and Pilot. *Pompons*, in 8-inch pots: 1st. Mr. Robinson, Pimlico, with Drine Drine (yellow, very fine), Bijou de Horticulture (creamy white, inclining to yellow towards the centre), Autumna (bronze), Solfaterre (bright yellow), Atropus (crimson), Cedo nulli (bluish white). 2nd. Mr. Ivory, President Decaisne, Solfaterre, Autumna, Minon (bluish white), Drine Drine, Cedo nulli. 3rd. Mr. Scruby, Graziella, Autumna, President Decaisne, Model (creamy white), Le Nain Bebe, Bijou de Horticulture. *Pompons*, in 32's: 1st. Mr. Robinson, Fenella (golden yellow), Minon, La Pactole (bronze yellow), Daphne (rosy-purple), Model, Drine Drine. 2nd. Mr. Holmes, Drine Drine, Autumna, Model, Sacramento (yellow), President Decaisne, and Fenella. A finely-bloomed collection of Pompons was exhibited by Mr. E. Spary, Brighton, trained to trellises, after the manner of trained Verbenas, lying flat upon the pot, producing a very pleasing and novel effect. These were also well-bloomed; and great credit is due to Mr. Spary for producing plants in such condition so far from where they were grown; but we give the preference to the natural style, as exemplified in Mr. Robinson's and Mr. James's plants. *Twenty-four Cut Blooms*: 1st. Mr. Wortley, Queen of England, Cyclops, Madame Audry, Formosum, Dupont de l'Eure, Campestroni, Golden Cluster, Lycius, Duke, Plutus, Defiance, Rabelais, Annie Salter, Pio Nono, Vesta, Nonpareil, Rosa, Mystica, Phidias. 2nd. Mr. Sanderson, Beauty, Queen of England, Golden Cluster, Beauty, Defiance, Phidias, Queen of England, Golden Cluster, Goliath, King, Alcibiades, Racine, The Warden, Vesta, Warden, Goliath, Rosa Mystica, Aristides, Formosum, Madame Corbey, Christine, Dupont de l'Eure, Admiral, Rosa Mystica. *Twelve Blooms*: 1st. Mr. James, Queen of England, Regina, Beauty, King, Christopher Colomb, Rosa Mystica, Warden, Leon Leguay, Plutus, Dupont de l'Eure, Lycius, Formosum. 2nd. Mr. E. Sanderson, Beauty, Queen of England, Clustered Yellow, Goliath, Warden, Dupont de l'Eure, Defiance, Themis Formosum, Pio Nono, Plutus, Rosa Mystica. *Six Blooms*: 1st. Mr. E. Sanderson, Clustered Yellow, Goliath, Queen of England, Defiance, Beauty, and Warden. 2nd. Mr. James, Beauty, Queen of England, King, Regina, Leon Leguay, and Plutus. 3rd. Mr. Hutton, Golden Cluster, Beauty, Nonpareil, Dupont de l'Eure, Madame Audry, Plutus. The finest specimens of cut flowers were Queen of England, Beauty, Dupont de l'Eure, Defiance, Pio IX., Plutus, Vesta, and Themis.

A NEW MAGNIFICENT CONIFEROUS EVERGREEN-TREE.—Messrs. Veitch's plant-collector, Mr. Lobb, has recently returned to this country, and brought, along with many other valuable things, a living plant and some seeds, of what may justly be termed the monarch of the Californian forests. It is an evergreen with foliage resembling that of the Cypress, of a pale grass-green. It there grows from 250 to 320 feet high, and the main trunk from 10 to 20 feet (or more) in diameter. What a tree is this, the girth of the trunk of which (at 5 feet from the ground) is more than twenty yards, and its height upwards of one hundred yards! It is supposed to be quite hardy in our own country. We have seen the living specimen, and shall give additional descriptive particulars in our next Number.—EDITOR.





Shimmia Japonica.



ILLUSTRATIONS.

SKIMMIA JAPONICA.

THIS very handsome *evergreen-shrub* is a native of Japan, where it grows on *mountains* about Stangasaki. It is so much esteemed by the Chinese, as well as the Japanese, that though a native, it is *cultivated* in their gardens, being not only beautiful, but the flowers have a peculiar *delicious fragrance*, much like those of the celebrated *Daphne odora* and *Olea fragrans*. Dr. Siebold, whilst in Japan, wrote about it, and stated, "The *evergreen* and *shining* leaves, the clusters of numerous and graceful flowers which all the ends of the branches produce from the beginning of spring, their perfume, and at the close of autumn the beautiful scarlet fruits, fully justify the rank which this charming shrub maintains as a *decorative* plant. It forms a neat bush, from three to four feet high, rarely beyond that, everywhere smooth and everywhere aromatic when bruised."

Mr. Fortune introduced this pretty shrub into England to Messrs. Standish and Noble's nursery at Bagshot. He remarks upon it: "This fine new evergreen shrub was discovered by me in the winter of 1848, and introduced into England in 1849. I met with it in a nursery near Shanghae, in China, and it was *the rarest and most prized plant* of the collection to which it belonged. The nurseryman told me that it was brought to him from a *high mountain* in the interior, named Wang-shan, and consequently the plant is called by the Chinese the Wang-shan-Kwei. The last term was given it on account of the fragrance of its flowers, which the Chinese consider as sweet as the *Kwei-wha*, or

Olea fragrans. These scented flowers are produced in great profusion in early spring, and are succeeded by bunches of bright red berries, like those of the English Holly. My own opinion is, that this fine bush will prove perfectly hardy in England. It cares nothing for the 'cold winds and sharp frosts' about Shanghai, and, no doubt, endures more on the inland mountains, where it is found wild, than in places nearer the coast." Further, he adds: "It will, no doubt, form, in a few years, one of the most attractive 'winter plants' our gardens can boast of. Fancy, if you can, our borders or parterres dotted in mid-winter with a pretty evergreen bush, only two or three feet high, and covered all over with bright red berries. In greenhouses, too, it will be invaluable for decorative purposes, where its flowers, although not showy, will fill the air with the most delicious odour, and its *profusion of berries* will be most attractive in the dull months of winter." Messrs. Standish and Noble state: "We find it perfectly hardy; and whether looking at it as an evergreen, or its very sweet-scented flowers or fruit, it is alike a very fine plant; and every one who has seen it in fruit has been charmed with it. Upon its first introduction doubts were entertained as to its complete hardiness; there are now, however, no just grounds for such. In the spring of 1852 we planted in the open ground a small specimen for experiment. In the spring of 1853 it flowered, and during the summer ripened its berries. At the moment of writing this (Jan. 26, 1854), those berries are still upon the plant; and with them a plentiful crop of flower-buds for the coming spring, when, doubtless, both the flowers of this year and the fruit of last, will be in perfection together. Besides the plant in question, others have been exposed to all the late severe weather; and not the tip of a leaf, or a flower-bud, has been injured in the least. It is as hardy as a common Holly, and the ordinary soil of a garden is all it requires on that head."

Dr. Wallich describes another plant, a *Himalayan* one, which was introduced into England several years previous to *S. Japonica*, and is now known under the names of *Skimmia Laureola*, and as *Limonia Laureola*: and an idea has got spread abroad that the *Chinese S. Japonica*, and the *Himalayan S. Laureola*, were identically the same; but in reality no plants can be more different, in so far as their ornamental properties are concerned, although they may somewhat resemble each other in their stems and leaves. The *Himalayan* plant has been growing out for several years, and yet we are informed that it scarcely ever opens its flowers, and never produces berries. The beauty of the *Chinese* plant (say Messrs. Standish and Noble) "not only consists in its being a mere dwarf evergreen bush, but also in the profusion of its flowers and abundance of Holly-like berries. Ours, too, flowers at two inches high, and fruits at six inches; but the other (*Himalayan* plant) although a very large plant, has never flowered." Mr. Van Geert, of Belgium, has had it many years; and although his plant is three feet high, and every year has all the appearance of coming into bloom, yet never does flower. In consequence of the mistaken conclusion of the plants being identically the *same species*, some persons have been sending *Limonia Laureola* for *Skimmia Japonica*, and in those instances

disappointment will be the result. Both have sweet-scented leaves, yet *Limonia Laureola* is by no means so sweet as *Skimmia Japonica*. The scent of the latter resembles that of ripe apples, but of the former a mixture of *Rue* and *Fraxinella*. The leaves of *Skimmia Japonica* are broad lance-shaped, pointed, and the surface somewhat undulate (wavy). Those of *S. Laureola* (or *Limonia Laureola*) are oblong, sharp-pointed, and the surface even (flat). We have been thus minute in describing the two, so that our readers may ascertain which is the true *S. japonica*. It is a free-growing plant, flourishes in a good sandy loam upon a dry subsoil, and merits a place in every shrub border, bed, greenhouse, or pit-frame.

NOTES ON NEW OR RARE PLANTS.

ALLOSORUS FLEXUOSUS. *Zigzag Allosorus*. (Synonyme, *Pteris flexuosa*; *P. cordata*.)—This pretty and singular climbing fern is a native of Peru and Mexico, and flourishes in a temperate fern-house. In the collection at the Royal Gardens, Kew, the plants are from four to five feet long. The main rib of the side branches are singularly zigzag, and the short rachises, one of which issues from each angle, are generally pinnated with from three to five oval heart-shaped leaves, each leaf being about three parts of an inch long, somewhat leathery. It is elegant, and well worth a place in every collection of exotic ferns.—(Figured in *Bot. Mag.*, 4762.)

ANGRÆCUM EBURNEUM. *The Ivory Angræcum*. (Synonyme, *Limodorum eburneum*.)—This fine stove Orchid is a native of Madagascar and Bourbon; a fine plant of it is in the collection at Kew Gardens. The plant is two feet high, having large, sheathing, leathery, shining, striated leaves, two inches broad. The flowers are produced in spikes, each having from six to ten large blossoms; sepals and petals much spreading, two inches and a half long, and half an inch broad; green. The labellum is of an ivory-white, thick and fleshy, of a broad heart-shape, two inches and a half across. It is a noble species, well meriting a place in any collection.—(Figured in *Bot. Mag.*, 4761.)

CEROPEGIA THWAITESII.—Of the natural order Asclepiadaceæ. Sent by Mr. Thwaites from Ceylon to the Royal Gardens at Kew. The plant is nearly a yard long, climbing, moderately branching, flourishing in the stove. The flowers are produced in umbellate racemes, arising at the angle of a leaf, one at each joint, and the raceme contains from three to five blossoms. Each flower has a narrow funnel-shaped tube, an inch and a half long, very narrow below, but much widened above, and almost globose towards the top. The tube is yellow, and the upper part of the flower beautifully sprinkled with dark blood-red spots. The blossom is singular in form, but very pretty.—(Figured in *Bot. Mag.*, 4758.)

DICHORISANDRA PICTA. *Blotch-leaved*. N. O. Commelineæ.—It is supposed to be a native of Brazil, and a stove plant. It is in the Royal Gardens at Kew. The plant is about a foot high, and the

branches are short, each having generally three leaves near the termination. Each leaf is broadly elliptical shaped, about four and a half inches long, green, often having a broad stripe of brown on each side, but edged with green, and very pretty. The flowers are borne in short terminal panicles, each blossom is an inch across, of a purple-blue, and a very distinct white spot at the base. Very neat and pretty.—(Figured in *Bot. Mag.*, 4760.)

EPIDENDRUM STAMFORDIANUM. *Mr. Stanford's*.—This beautiful flowering stove Orchid is a native of Guatemala, where it was discovered by Mr. Skinner, and of Santa Martha, in Mexico, by Mr. Purdie, who sent plants of it to Kew. It bears long dense racemes of flowers, each blossom being about two inches across.

PASSIFLORA MARMOREA.—This very beautiful species of Passion-flower is a native of New Granada, from whence M. Linden, of Brussels, obtained it in 1852. The leaves are similar in form to those of *P. vespertilio*, the *Bat-winged*, and the deep green foliage is beautifully marbled with white, somewhat like *Cissus discolor*. We have not seen a flower of it, but are informed it is equally handsome. If it did not produce a flower, the beauty of the foliage entitles it to a place in every stove or warm greenhouse.

TRIANÆA NOBILIS.—This fine plant makes a very admirable ornament when trained up a pillar, or round a circular wire framework. The leaves are large, leathery, resembling those of the *Solandra*. The flowers are in character like those of the *Cobœa scandens*, and produce a brilliant effect. The calyx is handsome, rose-coloured, spotted. The corolla is a vivid rose, edged with pure white, and a full-blown flower; is five inches across. It was obtained by M. Linden, of Brussels, from New Granada, and highly merits a place in every stove or warm greenhouse.

JOVELLANA PUNCTATA.—Introduced from Chiloe. It is a bushy evergreen shrub, having handsome leathery-like foliage, and blooms very freely during the spring season. The flowers are hood-shaped, of a clear blue, with a golden-yellow centre, spotted with chesnut colour in the inside, in a similar manner to the Foxglove. It is in Mr. Van Houtte's establishment.

Plants in bloom in the Royal Gardens at Kew.

STOVE.—*Ruellia macrophylla*.—A neat shrubby plant, with shining green leaves, and blooms freely. The flowers are produced in spiked heads; the tube of each blossom is about two inches and a half long, of a rich scarlet colour. A good winter-blooming ornament, well worth cultivating.

Echmea fulgens.—Its neat, shortish, pine-apple, plant-like leaves, and large branching panicle of fifty or more flowers, of a rich deep red, with a black tip, are exceedingly pretty. It merits a place in every stove.

Cypripedium insignis.—A fine Ladies' Slipper; the flowers are large, five inches across. The slipper portion (labellum) of a buff colour, with the upper part of the blossom (sepals and petals) white, edged with yellow and brown. It flowers very freely.

Cypripedium venustum.—The slipper (labellum) is mottled with

brown and green, and the upper portion (sepals and petals) white, with green stripes, tipped with brown. Both species are pretty winter-flowering, and continue in bloom for several months.

Medinella speciosa.—This robust plant, with its drooping, large, paniced raceme of flowers, intermingled with crimson, red, and blue, are very ornamental.

Begonia peltata, large leaves, and woolly-white blossoms. *B. fischeria*, a neat, numerous-branching, bushy plant, with white flowers. *B. longipes*, a compact erect growing plant, now five feet high, leaves large, angulated, flowers in terminal heads, white. *B. ulmifolia*, leaves oblong-shaped, long, grows erect and compact, now five feet high, flowers white, in terminal heads. *Ruellia ciliata*, with its neat, tube-shaped blossoms, each an inch long, of a rich blue, and the plant forming a neat bush, are exceedingly pretty.

CRINUM MELDENSE.—A fine hybrid, raised by M. Quetier, nurseryman, of Meux, and now in Mr. Van Houtte's collection. The flowers are beautiful, white above, and the under side a rose colour.

CALCEOLARIA LAVENDULIFOLIA.—A species obtained by Messrs. Standish and Noble from South America. Its neat, lavender-like foliage and bushy habit, along with its profusion of bright lemon-yellow flowers, render it an excellent bedding plant. The blossoms have the lips closed, and thus is less liable to injury by rain than any other Calceolaria. A bed of this in contrast with the pure white-flowered species, that has a similar neat foliage, would produce a pretty effect.

DENDROBIUM CHRYSANTHUM.—A magnificent plant of this fine stove orchid bloomed last summer, in the collection in the garden of Sir John Cathcart, near Windsor, which had one thousand seven hundred flowers; some of the flower-stems were five feet long. The large, rich, deep, orange-coloured flowers produced a splendid appearance. It is easy to cultivate, and well worth possessing.

ABIES JEZOENSIS. (Synonyme, Pinus jezoensis.)—This very noble and handsome tree grows one hundred feet high, and is found quite hardy in England. The leaves are nearly two inches long, thickly set along the branches, and have a very neat appearance. The cones (bearing seeds) are about nine inches long and two in diameter. Mr. Van Houtte has given a plate of it in the *Flore des Serres*, drawn from a specimen in his establishment, and the cone at that time was of a rich purple colour,

PICEA PINSAP. (Synonyme, Abies pinsapo.)—This very handsome coniferous tree grows to sixty feet high, quite hardy. The foliage is much like that of the common Balm Fir of our nurseries, and the branches are densely furnished, so that it is much handsomer than that species, and the plant is so thickly set with branches that the trunk inside of them cannot be seen, yet the outside of the tree is elegantly neat. It forms a perfect neat cone, broad at the bottom, and regularly tapering to the top lead of the stem. Where a handsome-formed evergreen-tree is required, nothing neater can be placed. It may be had at a trifling price, too.

ERODENDRON BUNGEI.—A noble-looking, ornamental, shrubby plant, having broad heart-shaped leaves, eight or nine inches long, which

have the robustness of those of *Paulownia imperialis*, or the *Catalpa*. The flowers are produced in terminal corymbose heads, of eight to nine inches across, containing from eighty to one hundred blossoms; each five-petalled blossom is about an inch across, of a rosy carmine colour. It flourishes admirably in a cool greenhouse or conservatory, requiring only just to be protected from frost. It is supposed to be likely to endure in the open ground, giving it protection in winter. It merits a place wherever it can be grown; and as it can be procured at a very reasonable price, we hope it will be extensively sold.—(Figured in *Flora des Serres*.)

METHONICA VIRESCENS, VARIETY PLANTII.—This plant has recently been offered to the public under the name of *Gloriosa Plantii*. The flowers are produced in tiers along the stem, each tier about a foot apart. Each blossom appears crisped, or curled at the edges, of an orange-red colour, with the lower narrow part green, and the under side of a buff-yellow. Each flower is about five inches across. It is a native of Port Natal, and requires to be grown on the stove.

BEGONIA LAPEYROUSEI.—A fine hybrid, between *B. hydrocotylæfolia* and *B. incarnata*. The flowers are produced in large branching panicles, of a beautiful satin-rose colour. It was raised on the continent, and said to be exceedingly handsome.

IN THE GREENHOUSES.—*Epacris hyacinthiflora*, deep pink, bell-shaped, very pretty. *E. variabilis rubra*, flesh coloured, with deep rosy-red tip. *E. miniata*, light red, white tip. *E. ochroleuca*, pale primrose. *E. grandiflora*, crimson, with white tip. *E. Hopeana*, flesh colour, tipped with rose. *E. impressa carnea longiflora*, bell-shaped, pretty pink. *E. ardentissima*, tube half an inch long, a rich crimson, very showy. *E. Wilmoreana*, tube one inch, deep vermilion. *E. formosa*, bell-shaped, half an inch; beautiful pink. *E. Tauntontoniensis*, tube one inch, deep rosy-crimson. *E. nivalis grandiflora*, bell-shaped, three parts of an inch long, pure white, very pretty. *E. elegantissima*, tube one inch, fine rosy-red. *E. Fairbairnii*, bell-shaped, half an inch, pink, pretty. *E. splendida*, bell-shaped, three parts of an inch, deep rosy-red, profuse. *E. fulgens*, bell-shaped, half an inch, rich pink. *E. Craigii*, bell-shaped, half an inch, beautiful flesh colour. The above beautiful *Epacris*es are very ornamental, and are particularly distinct in appearance; all of them merit a place in every greenhouse, rendering it quite gay through winter and spring, and some during summer also. *Correae brillanta*, tube long, of a fine crimson, having a large portion of the end a rich green. *C. tricolor*, tube long, flesh and rose colour, with a green end. *C. pallida*, tube nearly two inches long, greenish-white, very pretty. *C. bicolor*, tube one inch, rose, with green end. *C. Stockwelliana*, one inch, rosy-red. *C. speciosa*, one inch and a half, rich crimson, with green end. *C. magniflora*, one inch and a half long, pretty cream colour. *C. picta*, tube long, rose and yellow, with green end, pretty. *Selago distans*, very small, heath-like light green foliage, bearing a profusion of large, branching spiked heads of small flowers, a pure white, very neat, and by duly stopping the leads the plant is readily kept bushy. *Selago Gillii*, its flowers, too, are small, in short spikes, lilac colour. *Polygala ligularis*, a neat shrub, with large purple

and white flowers. *Ageratum glaucum*, a bushy shrub, bearing large flat terminal heads of white flowers. *Beaufortia decussata*, neat shrub, bearing a profusion of flowers; the long stamens compose the apparent blossoms, and are produced in large clustered heads, forming what is termed a bottle-brush head, and, being of a rich crimson, are very pretty, and render it a fine winter and spring ornament. *Acacia ovata*, flowers in small globes, a deep yellow, very profuse, leaves small; an elegant plant. *Acacia rotundifolia*, neat small foliage, flowers in globes, fine yellow, in profusion, pretty. *Acacia undulæfolia*, a neat small-leaved plant, bearing a profusion of rich yellow flowers in very long spikes; very pretty. Numerous other kinds will be in fine bloom in a fortnight hence. All the family of them are beautiful, and many of them have a rich perfume, and render them charming ornaments for the greenhouse and conservatory during winter and spring. The *Epiphyllum* (*Cactus*) *truncatus*, and its varieties, are now (in stoves) beautiful objects, some being grafted on the tall kinds, as is also done with *Cereus* (*Cactus*) *flagelliformes* (the creeping *Cereus*); the shoots hang down with long spikes of flowers, and are very pretty. *Begonia Prestonensis* is a charming plant, too; some may be had in bloom all the year. Many other Begonias bloom now, all delicately pretty and elegant.

REMINISCENCES OF GARDENS.

BY RISCIMARA.

THE arrival in this dreary season of that interesting periodical, the FLORICULTURAL CABINET, brings pleasing thoughts of verdant meads and gay gardens, and inspires hope for future horticultural enjoyments, when the snowy livery now worn (January) by Nature (and which is particularly conspicuous in the country) shall have disappeared, and the cheering sun shall again have exerted his reviving influence over the vegetable kingdom; and it prompts me to recall to my recollection some of the many gratifications I derived from flowers during the bygone year.

At an early period, a Camellia, new to me, met my view in a window at Norwich; it appeared to be a single white one, with a deep brown blotch in the centre, and was not fully expanded; it resembled the bloom of the *Althæa Frutex*. Near it was a little plant which seemed a trailer; pendent branches had small green leaves, and numerous scarlet flowers, and it was something like a miniature periwinkle in shape. I have an idea it was the *Euphorbia Jacquiniflora*, whose branches had been allowed thus to droop, and, with its companion, came from Mackie's nursery at Bracondale.

When the summer had just commenced, it was my lot to visit Framlingham, in Suffolk, and upon arriving near the castle, we found the horticultural show was that day to be held; but the doors were not yet open. It was interesting to observe the numerous carriages passing over the bridge which crossed the deep moat, and entering the court-yard of this

imposing structure; and to fancy the Princess Mary departing over *that very bridge* to assume the crown and sceptre of England. Warriors, too, had often emerged from the portals where now all was peaceful and serene; and the cause of so many persons of taste and respectability there assembling, was calculated to raise grateful feelings to the Divine author of all our blessings. We, too, soon crossed the bridge, were admitted through the massy gateway, entered the court, and found a long room in the castle devoted to the show; it had no architectural embellishments, but the horticultural ones were tastefully planned and well executed. There was no music to draw attention from the especial object of the day. On a white ground, and formed of ivy-leaves, variously arranged, we read the title of the meeting; and the effect was good and chaste. Several garlands adorned the walls, composed of Scarlet Geraniums and Syringa flowers, suspended above a decoration of blossoms of the Portugal Laurel. *Justicia carnea* and English Irises were seen in perfection. The Geraniums were numerous. I was much pleased with the Nonsuch for its good size, clear white ground, deep coloured rosy spots, rich pink upper petals with deep blotch, and its clear white throat. Verbenas striped, and variously tinted, were in abundance; but a very singular-looking plant made a deep impression on my memory. I understood its name was *Cateritia*; the leaves were like those of the Cornel Cherry-tree in shape and colour; the flowers were in clusters, and numerous, and resembled those of the small yellow Jessamine, only each was upon a tube about an inch long, under which were two delicately white leaves, of the same shape and size as the green ones; these leaves had a very unusual effect; the plant was bushy, and about a foot and a half in height. *Coleus Blumei* (described in the last Number of the *Floricultural Cabinet*) exhibited its irregularly serrated leaves, wide at the top and green, but sharply pointed below, with the centre of a purplish tint; it was not in bloom, but was a specimen not to be overlooked by the eye of an amateur. *Caladium bicolor* had leaves of an uncommon form, shaded and striped with dark and light tints of green. *Juonella parasitica* was about two feet high, with green leaves, the branches terminating with substantial-looking orange, heart-shaped flowers. There were some very handsome baskets, the lower fringes of which were composed of the blossoms of the white Acacia, which had a graceful and drooping effect.

Late in the year I saw, in a gentleman's garden at Wisbeach, amongst other beauties, the gaiety produced in the conservatory by the judicious arrangement of the new Pompon (or Minima) Chrysanthemums; they were, I believe, the best sorts, numerous and varied in their tints. They were occasionally backed by a few of the larger kinds; a beautiful collection of Fuchsias being interspersed, the contrast of colour, so late in the year, had a novel and charming effect. I am now watching with interest the opening of the scarlet blossoms of the curious *Sericographia Ghiesbreghtiana*, and the apparently white ones of the *Adamia versicolor*; their expansion is evidently impeded by the coldness of the season, and I am unacquainted with their treatment and history.



DRACÆNA DRACO.—DRAGON'S-BLOOD TREE.

Most botanical writers consider that this celebrated plant is a native of India as well as the Canary Islands. It is stated to have been introduced into England previous to 1640. A plant of it is usually to be seen in our botanical gardens, and is generally placed along with Agaves, Aloes, &c. No doubt, some of our readers will recollect seeing a long naked-stemmed plant, having a head very similar in form to one of a *Yucca* (Adam's Needle). There is one in the large Palm-house at the Royal Gardens, Kew, which has a naked unbranched stem of eight yards, with a large head, another yard. The leaves are from three to

four feet long by two inches and a half broad, terminating in long-spiked points; they have a glaucous hue, and somewhat leathery. The younger leaves shoot out erect, and force the previous ones proportionately outwards, so that the oldest half of them droop till the entire head has a globular appearance of seven feet, at least, in diameter. It has grown about eight inches higher each year since its removal into this celebrated house. The flowers are produced in branching panicles, arising from the centre of the head; three or four blossoms are clustered together, numerous, on these panicles. Each flower is an inch and a half across, six-petalled, of a yellowish-white, partly tinged with green. We have only heard of one plant blooming in the United Kingdom, namely, in the stove of the Dublin College Botanic Garden, in 1850. Dr. Mackay gives the following account of it:

"After it had been grown in a pot for ten years, it was planted out into a bed of earth in a large stove. About three years ago it became too tall for the house, and, in order still to secure the plant for the collection, the following experiment, suggested by Mr. Bain, was made. The stem, which was fifteen inches in diameter close under the leaves, and eighteen feet high, was, during six months, gradually cut across, four feet above the root, about an inch deep at a time, to prevent bleeding. The remaining part of the stem and root were then removed as being useless, and the upper portion of the stem (and its head) suspended immediately above the former station of the plant. In the course of eight months, during which time it was kept perfectly dry, it threw out several thick aerial roots from the edge of the stem where it had been cut. It was then lowered into its former position, and had the stem and roots sunk four feet in dry sandy mould. This was done about a year and a half ago, and the plant, which is now in excellent health, has lately flowered."

The tree derives its name from a *resinous exudation*, usually known in trade as "dragon's blood," and which, it is recorded, was an article of considerable exportation in the early conquest of the Canary Islands.

The plants grown in England cannot supply us with an idea even of the appearance the tree puts on in its *native isles* in its maturer age. A particular account of one is recorded in Webb and Berthelot's "History of the Canary Islands;" it is designated "The celebrated Dragon Tree of Orotava," of which a drawing was taken in 1790, but the plant having been injured by a tremendous storm in 1819, another drawing was subsequently taken.

Humboldt, in his "Travels," states, "It is now included within the garden of M. Franchi, in the small town of Orotava, one of the most delicious spots in the world. In 1799, when we climbed the Peak of Teneriffe, we found the trunk of this enormous vegetable was *forty-five feet* (fifteen yards) in circumference a little above the root." Sir George Staunton affirms that, at ten feet high, its circumference was thirty-eight feet; its height was calculated at from seventy to seventy-five feet. M. Berthelot states its growth from twenty-five to thirty years is its "first age," or infancy. He speaks of two other periods "of maturity, or of reproduction, when a rapid production of *branches* occurs, and the *trunk* sensibly increases in thickness; then, too, com-

mences the flowering period." In the third period, "of age or decay," aerial roots appear on the trunk, &c.

A part of a *branch* from this celebrated tree is in the Museum of the Royal Gardens at Kew; *its diameter* is two feet. What a majestic object must this tree have appeared, with a *trunk* fifteen yards through, bearing its immense number of *thick* branches, and immensely more numerous lateral ones, *each* terminating in a large *Yucca-like* head of leaves, flowers, &c. Our figure is on a very reduced scale of that which was taken of the great "Dragon Tree of Orotava," as it appeared in 1790.

WINTER CULTURE OF MIGNONETTE.

BY MR. JAMES MAYOR, CASSIA LODGE, OVER CHESHIRE.

HAVING met with considerable success in the culture of this, perhaps the particulars of my method will be found useful to some of your subscribers.

It would be superfluous to advance anything in favour of its merits, as a *summer* plant, as this is already universally known, but that it is one of the most useful plants in *winter* that we are in possession of, is perhaps not so generally understood; but those who have already succeeded in bringing it to perfection in winter, will readily agree with me.

This plant, when subject to any artificial treatment, is extremely susceptible of *atmospheric variations*, more so perhaps than any other plant of its character; yet, when the temperature of the house of which the plant is an occupant, is kept *steady*, it will thrive with a rapidity far exceeding the expectations of the most sanguine experimentalist. It is also very impatient of damp, particularly in the earlier stages; this being the case, watering over head necessarily becomes a *dangerous process*, although an indispensable requisite. A bright morning, when air can be admitted freely, is the best time for this operation; once a week will be sufficient to meet the requirements of the plant, and quite as often as its constitution will allow. Water is never administered to the root, so long as the compost contains moisture enough to prevent the plant from flagging. It is the practice with some who grow this plant in winter to have recourse to stakes; that is to say, they fancy that every shoot, no matter how long or short the same may be, requires a stake, and a stake it must have. This, however, is in direct opposition to the *habit* of the plant; and further, any infringement of this sort unquestionably meets with that disappointment which such a violation of the laws of Nature merits.

It is essentially necessary that the plant, or plants, should be kept *near to the glass* until the time of flowering, as they acquire considerable strength by their proximity to the same. My mode of procedure, is as follows:

Towards the beginning of August the seeds are sown in boxes or seed-pans, in compost of equal portions of loam, leaf-mould, and thoroughly

decomposed dung (from the old hot-beds) ; they are then removed to an airy shelf in the greenhouse, where they remain until the plants have attained a height of about two inches, when they are carefully pricked into No. 12 pots, four in each pot, in the compost I have mentioned.

The plants, as noticed before, must be kept on the shelf until they show flower, when they are transferred to the stands or brackets on which it is supposed they will remain over the time of flowering. At this stage of the proceedings clear liquid-manure is given every alternate watering ; be it remembered that the water on all occasions is made conformable with the temperature of the house. As the flowers begin to develop themselves, liquid-manure is given when anything in the shape of moisture is required by the roots. Nothing further in the shape of potting is needed ; all that is now wanting is due attention to watering, and I venture to say, that the result will not only be satisfactory, but will doubly repay the cultivator for the attention bestowed.

THE WEEPING-ROSE, AND THE TREE-ROSE.

BY A LADY CULTIVATOR OF THEM IN MIDDLESEX.

THE increasing number of splendid varieties of the much-esteemed family of Roses, and their admission into every flower-garden and pleasure-ground being a desideratum, induces me to forward a few practical observations on their culture as standards, and on what are termed weeping roses. During the past summer I have been much struck with the increasing taste for their culture on lawns, and to exhibit their splendid heads in the centre of a flower-bed, or back part of a border.

In remarking on the growth of a tree-rose, I must observe, that the rings round the bottom of both *stem and branches* are the depositories of a *dormant bud*, which will not be called into action unless the *buds above* be injured, or unless the sap arise so profusely as to be unable to expend itself by the upper parts, in which case the buds below break out ; though, indeed, they will occasionally do so, as the natural act of the tree in preference to rising higher. This is more observable in the wild rose than almost any other plant, and perhaps may, in some degree, explain the reason why budded roses are shorter lived than those on their own bottom ; for any one who has at all observed the growth of wild stocks, must have noticed that the original head is seen generally on hedges in much worse plight than the shoots which have been subsequently formed at its base. This tendency of the dog-rose to break out below, must be checked, I find, in two ways ; the first, by destroying every sucker and shoot as it starts, and the second, by finding full work for the sap above, and giving it a free passage.

If, then, in cutting the top of a tree at pruning time, you leave a couple of buds on every shoot of last year's growth, or three at most upon a very strong one, there will be quite enough to occupy the sap, keep the tree within bounds, make it much handsomer, save the sap

the expense of maintaining old wood, and give it a free course. If there be more sap than enough, a fresh shoot will likely enough start from the crown of the graft, or the rings upon the first year's shoot, and increase the head of the tree, as well as bring you back with new wood nearer home,—a matter always desirable as tending to keep the head from straggling.

Cutting to the lowest buds always leaves the sap with but a short channel to pass through, strengthens the branch below the buds, and is every way beneficial, if care be taken that a sufficiency be left to occupy the sap.

If the tree be not pruned at all, it will lose its shape entirely in a single year, afford little or no bloom the next, and eventually straggle to death.

Trimming the shoots has nothing essentially different in the manner of execution to trimming the stock; in trimming to a bud, barely the thickness of a sixpence should be left above the bud, and the excision should form a slant about equal to that caused by dividing a square from angle to angle: if more were left above the bud, it would die down to the bud, and prevent the bark from healing over the wound; in general, the line of the bud is the slant the knife should make in its passage through the shoot.

Cutting out old wood should always take place where it can; the desirable point being to keep near home, as it is called; when, therefore, your tree throws out a fresh and vigorous shoot, close to the base of an old branch which has straggled too far from the graft, cut out the old wood in March, close to its base, leaving the young shoot to supply its place, and receive its nourishment. This principle well applied, will always keep the trees in bounds; but as this requires judgment, and cannot well be explained in writing, take a lesson upon the subject, the first convenient opportunity, from a scientific gardener.

A tree well formed, with a promising head, and in health, ought, the spring succeeding the budding, to have a clean straight stem, no lumps or knots, one shoot quite at the summit, and two, or at all events, one other shoot as near as possible also to the top; if there are two shoots only, at opposite sides to each other; if three, forming a triangle; if more, as nearly equidistant from each other, in the diameter of the stock, as possible (and here, be it observed, that the more shoots at the top of the tree, the handsomer and quicker is the head formed), each with a bud inserted in it, close to the stem; and at the cross cut, where the bark of the bud usurps the place of the original bark of the stock, a sufficiency of sap ought to have exuded, not only to have joined the bark of the bud with the unmoved part of the bark above it, but also to have joined the separated part of the bark of the stock to the same place, and thus linked the two barks of bud and stock to the single bark of the stock above them.

The edges of the vertical slit in the bark do not heal by attaching themselves to each other, but the bark of the bud underneath them forms a connecting link, and the edges above mentioned perish insensibly away, leaving little or no scar behind. The second spring, the tree becomes more perfect, the extraneous parts of the stock, if any remain,

are cut off, as well as those of the shoots, and the head so arranged as to throw its buds where they are wanted to make it round, even, and handsome. If, however, some shoot be obstinately bent on growing in any direction, spoiling the appearance, and crossing the others, by no means remove it on that account alone, but place a little twig across from it to any other convenient branch, and confine it for the season as you wish it to be, removing the ligature in the succeeding spring, or even in the same autumn when the sap is down.

Lastly; the third spring the tree should show itself with all its wounds nearly closed, its buds strong, full, and healthy, and it should look perfectly natural, those parts of the shoots upon which the buds were placed more incorporated with the stock. The bark clean, no dead wood; and wherever a shoot has been shortened, the place so grown over as to leave no dissight, which will be the case for some time wherever any wood more than one season old is cut away, and a thin shoot of a single year springs at the end of it. This is the reason why forest trees look so ill when shortened as old ones, viz., that the taper appearance is destroyed, and wood of five or six years' growth is continued by the shoot of a single spring, and thus a piece of wood, of the diameter of half a dozen inches, has a little mean-looking shoot, or in all probability half a dozen, not thicker than horsewhips, at the end of it.

Whatever it is worth while to do, it is worth while to do well; work properly commenced does not require that constant superintendence which a bad beginning is certain to render necessary, and which eventually involves a much greater expenditure of time than any labour bestowed at the outset could have demanded.

Having thus brought my remarks to a close, as to the operative part, in preparing and perfecting the tree, it may not be amiss to spend a few moments in the consideration of the effect expected to be produced by it when planted out.

There are three causes of beauty in a tree,—shape, foliage, and flowers. Shape (to a certain degree) we artificially gain; foliage and flowers must depend upon the sort; the foliage is the more permanent, the flower the more striking. Planting out, then, must depend entirely upon the effect desired, and the taste of the party planting, as to variety of foliage, height, flower, its colour and continuity; a tree with rambling shoots suits one place, and with a cauliflower head another. The tree-roses never look well in a round clump; they must have a single appearance, or be in some sort of line.

If your roses are to look, when finished, like a sloping bank, plant your heights in succession, viz., each under each; but if they are to have a less forced and regular appearance, and a more single and light look, leave out an intermediate height, as thus: a two-feet in front of a three-feet, &c.

Be it observed, that a three to four-foot standard is most in keeping with the head it carries, and, being nearer the ground, has a very natural and steady effect, and in confined places it is unquestionably best in its appearance; but if the tree is to be distant from the eye, or the shrubbery or walk be large and increasing in distance, a four-

foot standard is certainly more distinguishable, and has a much greater effect.

A foot standard is of little or no use, except it be intended to approach the edge of a border, or is grafted for the convenience of affording nose-gays, or increasing the quantity of the plant placed upon it.

The heights most in use having been shown, it may be remarked, that for a weeping-rose to stand singly (perhaps surrounded with a wire guard and creepers upon it, to have a more marked effect), you cannot find a stem too high, if it be proportionally strong. A fine plant of this sort, seven to ten feet high, budded with a noisette, or boursalt, looks beautiful, and its long free branches, covered with clusters of roses, have a wild and luxuriant appearance, which give a distinct character to a tree budded in this way. Or some natural climber, having but one main shoot tied up erect, and all its buds cut out as high as it is desired the naked stem should be, may then have a head of shoots formed; and if they be allowed to droop answers equally well. I have several, with umbrella-shaped wire frames fixed at the top of the iron or wood support, over which the head of shoots are tied at equal distances, and hanging over the rim, when in bloom, are very beautiful, with their numerous drooping chains of lovely blossoms. They are handsome ornaments for the garden or pleasure-ground.

HOW TO GROW, AND BLOOM IN PROFUSION, THE PLEROMA ELEGANS.

BY AN ARDENT ADMIRER OF FLOWERS.

DURING the last summer I made a gardening tour of six weeks, and amongst the most beautiful of *warm greenhouse* plants was this very ornamental flowering plant; and what adds to its value is, that the numerous large (Melastoma-like) flowers are of a colour most wanted to adorn our collections; namely, an *intense blue with a shade of violet*. One magnificent specimen was about thirty inches high, and as many across—a complete bush of branches; and the entire was in a profusion of bloom. Each blossom an inch and a half across. By frequent stopping the shoots last year, for the purpose of forming the plant (not allowing it to flower), it had been well done. It was grown in a compost of equal portions of chopped turfy loam, and turfy sandy peat, both having been chopped, turned, &c., during the previous year. A third part consisted of old rotten manure, leaf mould, and a sprinkling of bits of charcoal, and a free drainage. Manure water was given every third supply. This very showy plant ought to be grown in every collection, and would be one of the finest ornaments. It succeeds well, too, in the stove, is readily increased and cultivated; the great desiderata is to have the *young wood well ripened*. Perhaps it would be best obtained by having a few plants, and allowing half to rest a year for preparation, whilst the other was allowed to bloom; thus alternately treated, would provide a fine bloom on superb specimens.—*An Amateur Plant-grower, Baling.*

OBSERVATIONS ON THE CALCEOLARIA.

BY MR. J. SHEPPARD, FOREMAN IN THE GARDENS OF THE MARQUIS OF BATH,
AT LONGLEAT, NEAR WARMINSTER.

THE admiration of *vegetable beauties* is almost as universal as the inhabitants of the world; their cultivation coextensive with the existence of the human race; and it is certain that flowers have always been a favourite luxury and embellishment of home in every age, country, and clime. From time immemorial, too, a *flower-garden* has been deemed an essential attachment to the habitation of man. So strongly is the love of "these natural beauties" implanted in the breast of man, that those who have not a *terrestrial allotment*, except what is limited to that contained in an *earthen vase, or pot* of a few inches in diameter, contrive to raise and cultivate a plant. How cheering is the consideration that the CREATOR has furnished us with *ornaments* alike calculated to adorn and gratify the sight to *any extent*: but where the bounds are *very limited*, even the *elegance and beauty* of a *single plant* present an exquisite picture, alike suited for the admiration and enjoyment of its possessor.

At no previous period has there existed such a galaxy of *varied beauties* to adorn and perfume our flower-gardens and parterres as at the present day, and in each recent successive year new beauties appear. I have been particularly struck with this fact during the last year; for as each following Number of this Magazine appeared, it contained a description of additional novelties in its lists of new and rare plants, and other contributions. I am glad that the present year's volume begins so well, too, and was pleased to find a descriptive list of an ornamental section of bedding-plants given at page 6 of this month's Number, by Mr. Burley; and I by no means wish, in my further observations on the Calceolaria, or that list of varieties, to depreciate the excellent remarks he has given us, neither do I intend to speak in disparagement of the Calceolaria as a bedding-plant; and I have no doubt the list Mr. Burley has added to his remarks contains some very superb varieties. At the same time, I think he must have forgotten our old and tried friend, *C. rugosa*, among the yellows; or do those he recommended really supersede this, in the *profusion* of flowers and *compactness* of habit?—if so, they are indeed a valuable acquisition. Their propagation, I beg to say, is much easier than your correspondent led your readers to suppose; although I must admit they amply repay any trouble the cultivator may bestow.

Some time back, before the duty was taken off glass, my then employer required an unlimited number of this plant, for various purposes, which was supplied by the following means:—A temporary frame was made up, as we required all the glass structures for other purposes; to this temporary frame some light-made sashes were obtained, and to these some cheap calico was applied, and *tacked tightly on*. This done, the calico was dressed over with a mixture of bees'-wax and linseed-oil, made hot enough to dissolve the wax, and applied with a brush on the outer side. This substitute for glass will be found to keep waterproof, and, if taken care of, will last for a number of years.

In order to raise a stock of plants, a little rubbish should be placed in the bottom of the frame, and on this about four or five inches of soil, sprinkling the top with a little coarse sand to keep them firm; damp the surface, and it is ready for your cuttings, which must be placed about two inches apart each way, placing them in rows up the frame.

If the cuttings are properly made, scarcely one will fail rooting. Here they are to remain until wanted for bedding. They must be kept close by day until fairly rooted. When they are wanted for planting out, they may be taken carefully up with a small plunging-fork, and with as much earth adhering to them as possible, at once transferring them to their destination.

In conclusion, I by no means recommend these canvas frames for *constant* purposes, at the present cheap rate of glass; but at the time I am speaking of, they formed one of the cheapest as well as most useful frames a gardener could possess for striking cuttings of half-hardy plants, affording a nice medium shade. If glass is now used, the above directions are applicable, only the glass *must be shaded until the cuttings are rooted*. After this, the lights should be drawn off on all favourable opportunities, to avoid damp. Cover up on the appearance of frost. Scarlet geraniums and many other plants will stand this mode of treatment with impunity, damp being the principal thing to guard against. The value of this mode of treatment above that of Mr. Burley's (if I may presume to compare them) is this: any person possessing a common *one-light* garden-frame, may, with the necessary quantity of cuttings, furnish themselves at bedding-time with one hundred plants, at least, of these esteemed and justly-prized favourites. If only a very few of them are wanted, I would decidedly recommend rooting them under a common handglass placed behind the wall of any building. In that case, shake a little soot before laying the sand, to keep them unmolested by worms, insert the cuttings, sprinkle overhead with a fine rose, and they will not require any further attention, till rooted, beyond shading.

The method of treatment detailed in the preceding particulars is so simple that, being adopted, any LADY GARDENER may furnish herself with an ample supply of plants, with little attention, and at a very cheap rate. In both cases, *propagating* should not be *later than October*, that they may be fairly rooted before winter sets in.

MISCELLANEOUS SECTION.

ASIATIC GARDENS.—Sir R. K. Porter, in his "Travels in Georgia, Persia, and Armenia, from 1819 to 1821," thus describes the Royal Gardens of Persia:—"Having, for the most part, described the royal residence in the *Ark*, attached to the city, I shall not say anything more of its details, but proceed to the *agrémens* of two much more delightful palaces in the neighbourhood. One, called the *Tacht-i-Kajer*, is situated about three miles to the north-east of the town; being intended as a summer retreat from the toils of state, whenever the

king might find it expedient to pass the whole year at *Teheran*. But this rarely happens, *Khorassan*, or *Sultania*, or *Oujan* being in general his abodes during the warm months. *Tackt-i-Kajer*, however, is constantly inhabited by any number of his ladies of the harem, whom he may not choose should accompany him on his further journeys. It stands on an eminently pleasant point of the adjoining mountains, being built on a detached and commanding hill on the great slope of the *Elbors*. The edifice is lofty, and when seen from a distance, presents a very magnificent appearance. The stateliness of the structure itself is very much increased in effect by the superb ranges of terraces, which connect its spacious gardens, as they diverge from the base of the building downwards towards the bottom of the hill. They are laid out in parallel walks, planted with luxuriant poplars, willows, and fruit-trees of various kinds, besides rose-trees in profusion. In the centre of these shady labyrinths stands a kind of grotto or temple, which, from its construction, materials, and distribution of water, must, in summer, be delightful from its coolness and seclusion. Few of the flowers were in bud when I first visited this charming spot; but the balmy season advancing with singular rapidity in these higher tracts of Persia, soon covered every mountain's brow with rich herbage, and filled the whole air with perfume from the full-blown gardens. The spring at *Teheran* is not only the pleasantest of the seasons, but the most healthy, which I found by experience. While I was there, during the months of April and May, the thermometer of Reaumur never mounted to more than from 70° to 80° in the shade. In the short space of those few weeks the whole country put on its fairest garb, looking enchantingly, and breathing sweets from every quarter; and how often did we think of our poor friend, whose eyes we had so recently closed, and wished he could have borne the last lingering severities of departing winter a little longer, to have inhaled new life in this balmy relenting of nature. One of the delicious spots, to which I paid the most frequent visits after the commencement of the genial weather I speak of, was the garden of *Negauristan*, another palace of the king's, in the same direction as the one just described, but only half a mile from the city. Its near neighbourhood, as well as superior beauty, often attracts the Shah to walk to it from the *Ark*, and to pass hours there, in the most delightful relaxation of mind from the cares or ceremonies of State. The general character of the garden is like that of *Tackt-i-Kajer*, only the grand avenue up the centre of this is much wider than that of the more distant residence, and is terminated at the higher extremity by a view of the palace; while a *Koolch Fraugy*, or temple, appears here also between the spacious arcade of trees. Narrow secluded walks, shaded above, and enamelled with flowers below, with cuts of clear and sparkling water, silvering the ground and cooling the air, vary the scene, from parts which the neglect (or taste assuming graceful negligence) has left in a state of romantic wilderness. The trees were all full-grown, and luxuriant in foliage; while their lofty stems, nearly covered by a rich underwood of roses, lilacs, and other fragrant and aromatic shrubs, formed the finest natural tapestry of leaves and flowers.

"On my first entering this bower of fairy-land (indeed I may call it

the very garden of Beauty and the Beast!), I was struck with the appearance of two rose-trees, full fourteen feet high, laden with thousands of flowers, in every degree of expansion, and of a bloom and delicacy of scent that imbued the whole atmosphere with the most exquisite perfume. Indeed, I believe that in no country of the world does the rose grow in such perfection as in Persia; in no country is it so cultivated and prized by the natives. Their gardens and courts are crowded with its plants, their rooms ornamented with vases filled with its gathered bunches, and every bath strewn with the full-blown flowers, plucked from the ever-replenished stems. Even the humblest individual, who pays a piece of copper money for a few whiffs of kalioun, feels a double enjoyment when he finds it stuck with a bud from his dear native tree! But in this delicious garden of *Negauristan* the eye and the smell were not the only senses regaled by the presence of the rose. The ear was enchanted by the wild and beautiful notes of *multitudes of nightingales*, whose warblings seem to increase in melody and softness with the unfolding of their favourite flowers; verifying the song of their poet, who says, 'When the roses fade, when the charms of the bower are passed away, the fond tale of the nightingale no longer animates the scene.' "

CULTIVATION OF THUNBERGIAS.—Every species or variety of this lovely genus are handsome, some of them very particularly so, neat and elegant, and can be had in fine bloom from the early part of spring to November; in fact I have a succession, and have flowering plants all the year, in the stove during winter, and greenhouse in the summer. I treat my plants in the following manner:—As all sorts ripen their seeds well, I raise my plants from seeds every year. They are sown in 48-sized pots, in a rich light soil, plunging them to the rim in a cucumber frame in the beginning of February; and, as soon as they are about four inches high, they are potted off singly into 48-sized pots, in the following compost:—Light turfy-loam, black heath soil, good rotten hotbed dung, equal parts, adding a little leaf-mould. As soon as the roots fill the pot, the plant is shifted into a 16-sized pot, and is then topped to cause it to throw out lateral branches, repotting it till it has acquired nine shoots; and, when requisite, it is repotted into a 4-sized pot, and removed into a stove or vinery at work, where a trellis is made for it in the following manner:—Eight small green rods are placed round the inside of the pot, six feet long, and one in the centre seven feet long, a wire hoop being fastened round the top of the eight outside rods; and from the top of each of these rods a small piece of twine or wire is carried to the top of the centre rod, thereby forming a dome. A shoot is fastened to each of these rods, and frequently stopped, to furnish the trellis completely; and to keep the plant vigorous, all flower buds are nipped off as soon as they appear, until the trellis is nearly covered; watering frequently with *manure water*. Of course the pot must be thoroughly drained, which is an important feature in the cultivation of all plants in pots.

With this treatment I have grown all the species and varieties of the *Thunbergia*, to the admiration of all who saw them, both as to vigour and profusion of large flowers.—*J. Price.*

NOTES ON THE PLANTS OF CHINA.—At this festive season flowers are as much sought after here, for the purposes of decoration, as they are at home at Christmas-time. On visiting some of the flower-shops in Shanghai, in the middle of January, I was surprised to find a great many flowers, which had been forced into bloom, and were now exposed for sale. I was not previously aware that the practice of forcing flowers was common in China. Many plants of *Magnolia purpurea* were in full flower; as were also many kinds of double-blossomed Peaches, the pretty little *Prunus sinensis alba*, and a variety of Camellias. But what struck me as most remarkable, was the facility with which the Moutan Poony had been brought into full bloom. Several varieties of this plant were in full flower; and at this season of the year, when everything out of doors was cold and dreary, they had a most lively effect. Their blooms were tied up, to keep them from expanding too rapidly. All these things had been brought from the celebrated city of Soochow-foo, the great emporium of Chinese fashion and luxury.

It may be thought that the Chinese have glass houses, hot-water pipes, and all those fine things, which assist gardeners and amateurs in Europe. Nothing of the kind; they do all these things in their houses and sheds, with common charcoal fires, and a quantity of straw to stop up the crevices in the doors and windows.—*Fortune's Visit to the Tea Districts of China.*

NATIONAL CARNATION AND PICOTEE SHOW, HELD AT YORK ON AUGUST 3.—
NURSERYMAN'S CLASS.

Twelve Carnations.—1st. Mr. Keynes, of Salisbury, with *Acca*, *Magnificent*, *Owen Glendower*, *Duke of Sutherland*, *Queen of Roses*, *Twynford Perfection*, *Admiral Curzon*, *Valentine*, *Jenny Lind*, *Lady Gardener*, *Beauty of Woodhouse*, and *Lord Lewisham*. 2nd. Messrs. Schofield and Son, of Leeds, with *Magnificent*, *Telomachus*, *Beauty of Woodhouse*, *Count Pauline*, *Rainbow*, *Paul Pry*, *Flora's Garland*, *Firebrand*, *Squire Trow*, *Admiral Curzon*, *Lovely Ann*, and *Justice Shallow*. 3rd. Messrs. Bainbridge and Hewison, York, with *Lorenzo*, *Mara*, *Count Pauline*, *Harriet*, *Premier*, *William IV.*, *Lydia*, *Beauty of Woodhouse*, *Mr. Peto*, *Music*, *Paul Pry*, and *Enchanter*.

Twelve Picotees.—1st. Mr. Keynes, with *James II.*, *Venus*, *Mrs. Barnard*, *Princess Royal*, *Ophelia*, *Alfred*, *Victoria Regina*, *Haidee*, *Juliet*, *Lord Nelson*, *Countess*, and *Grace Darling*. 2nd. Messrs. Schofield and Son, with *Olivia*, *Beatrice*, *Mary Ann*, *Portia*, *Prince Arthur*, *Mrs. Horner*, *Alfred*, *Isabella*, *Miss Rosa*, *Victoria Regina*, *Mary*, and *Ann*. 3rd. Messrs. Bainbridge and Hewison, with *Miss Rosa*, *Portia*, *Sir W. Middleton*, No. 70 (*Dodwell*), *Prince of Wales*, *Lady Harriett Moore*, *Elizabeth*, No. 8 (*Dodwell*), *Lady Harwood*, *Mrs. Barnard*, *Sebastian*, and *Mary*.

PRIVATE GROWERS.

Twelve Carnations.—1st. Mr. E. S. Dodwell, of Derby, with *Sarah Payne*, *Romboldt* (*Bayley*), *Premier*, *Firebrand*, *Ariel*, *Rachel* (*Dodwell*), *Lorenzo*, *Lord Milton*, *Rachel*, *Lord Milton*, *Poor Tom*, and *Admiral Curzon*. 2nd. Mr. Bayley, Derby, with *Lord Raneliffe*, *Premier*, *Sarah Payne*, *Ariel*, *Falconbridge*, *Rubens* (*Bayley*), *Queen Victoria*, *Rachel*, *Admiral Curzon*, *Lord Milton*, *Firebrand*, and *Flora's Garland*. 3rd. Mr. H. Steward, York, with *Lorenzo*, *Lord Raneliffe*, *President*, *Harriet*, *Squire Trow*, *Africana*, *Lord Raneliffe*, *Splendid* (*Hardman*), *Admiral Curzon*, *Splendid* (*Hardman*), *Firebrand*, and *Admiral Curzon*. 4th. Mr. John Edwards, London, with *Queen Victoria*, *Acca*, *Sir Joshua Reynolds*, *Tybolt*, *Admiral Curzon*, *Romeo*, *Princess Royal*, *Tybolt*, *Admiral Curzon*, *Squire Meynell*, *Sarah Payne*, and *Queen Victoria*. 5th. J. J. Coleman, Esq., Norwich, with seedling, *Lord Raneliffe*, *Premier*, *Music*, seedling, *William IV.*, *Lorenzo*, *Justice Shallow*, *Squire Trow*, *Firebrand*, and *Matthew's Esther*. 6th. Mr. Burman, of Hull, with *Prince Albert*, *Horse*, *Mrs. Pickering*, *Admiral Curzon*, *Lady Ely*, *Admiral Curzon*, *Duncan*, *Lovely Ann*, *Lord Byron*, *Firebrand*, *Squire Meynell*, and *Lord Milton*.

Twelve Picotees.—1st. Mr. E. S. Dodwell, with Duke of Devonshire (Bayley), Regina (Marria), Prince of Wales, seedling, Haidee, Countess, Venus, Prince Arthur, Rosalind, Mrs. Norman, Mrs. Barnard, and Bridesmaid. 2nd. Mr. John Edwards, with Mrs. Norman, Princess Royal, Alfred, Princess Royal, Grace Darling, James II., Queen Victoria, Countess, Christabel, Mrs. Barnard, Gem, and Queen Victoria. 3rd. Mr. Bayley, with Duke of Devonshire, Regina, Haidee, Countess, Venus, Mrs. Barnard, Gem, Prince Arthur, Prince of Wales, Duke of Devonshire, Prince of Wales, and Bridesmaid. 4th. Mr. Silbey, of Nottingham, with Gem, Mrs. Barnard, Alfred, Ophelia, Alfred, Lord Nelson, Sophia, Jenny Lind, Theodore, Mrs. Norman, Princess Royal, and Lady Alice Peel. 5th. Mr. H. Steward, with Miss Rosa, Ganymede, Elizabeth, Miss Rosa, Enchantress, Princess Royal, Mrs. Barnard, Juliet, Princess Alice, Mrs. Norman, and Delicata. 6th. Mr. Fisher, Derby, with King of Purples, Countess, Mary, Lady Harriet Moore, seedling, Mrs. Barnard, Prince of Wales, Isabella, Venus, Prince Arthur, Lord Nelson, and Bridesmaid.

SINGLE BLOOMS, IN CLASSES: OPEN TO ALL.
CARNATIONS.

Scarlet Bizarres.

- 1 Admiral Curzon, Mr. Keynes
- 2 Ditto ditto
- 3 Prince Albert, Mr. Silbey
- 4 Rembrandt, Mr. Bayley
- 5 Admiral Curzon, ditto

Crimson Bizarres.

- 1 Owen Glendower, Mr. Keynes
- 2 Ditto ditto
- 3 Lord Milton, Mr. Bayley
- 4 General Monk, Mr. Keynes
- 5 Lord Milton, Mr. Bayley

Pink and Purple Bizarres.

- 1 Sarah Payne, Mr. Bayley
- 2 Sarah Payne, Messrs. Schofield & Son
- 3 Sarah Payne, Mr. Bayley
- 4 Lady of the Lake, Schofield and Son
- 5 Sarah Payne, Mr. John Edwards

Heavy-edged Red.

- 1 Mrs. Hoyle, G. W. Hoyle, Esq.
- 2 Ditto ditto
- 3 Theodore, Mr. Keynes
- 4 Seedling No. 10, Mr. Bayley
- 5 Duchess of Cambridge, Mr. Silbey

Light-edged Red.

- 1 Gem, Mr. Silbey
- 2 Gem, Mr. Bayley
- 3 Mary, Mr. Fisher
- 4 Mary, Mr. Steward
- 5 Jenny Lind, Mr. Silbey

Heavy-edged Purple.

- 1 Alfred, Mr. Keynes
- 2 Duke of Devonshire, Mr. Bayley
- 3 Lord Nelson, Backhouse and Son.
- 4 Alfred, Mr. Keynes
- 5 Duke of Devonshire, Mr. Bayley

Light-edged Purple.

- 1 Haidee, Mr. Keynes
- 2 Ophelia ditto

Purple Flakes.

- 1 Premier, Mr. E. S. Dodwell
- 2 Ditto ditto
- 3 Ditto ditto
- 4 Ditto ditto
- 5 Ditto ditto

Scarlet Flakes.

- 1 Commander-in-Chief, Mr. Steward
- 2 Queen Victoria, Mr. Dodwell
- 3 Firebrand, Mr. Steward
- 4 Firebrand, Mr. Dodwell
- 5 Firebrand, Mr. Bayley

Rose Flakes.

- 1 Flora's Garland, Mr. Keynes
- 2 Ditto ditto
- 3 Magnificent, Mr. Bayley
- 4 Seedling, No. 4, ditto
- 5 Rosetta, Mr. Keynes

PICOTEES.

- 3 Haidee, Mr. Keynes
- 4 Bridesmaid, ditto
- 5 Ditto ditto

Heavy-edged Rose.

- 1 Alice Hoyle, G. W. Hoyle, Esq.
- 2 Venus, Mr. Bayley
- 3 Lamia, Mr. Keynes
- 4 Alice, G. W. Hoyle, Esq.
- 5 Miss Rosa, Mr. Bayley

Light-edged Rose.

- 1 Seedling, Mr. Dodwell
- 2 Mrs. Barnard, Mr. Silbey
- 3 Mrs. Barnard, Mr. Bayley
- 4 Mrs. Barnard, Mr. Silbey
- 5 Miss Rosa, Messrs. Backhouse and Son

Yellow.

- 1 Martin's Queen Victoria, Mr. Keynes
- 2 Malay Chief, Mr. Burman
- 3 Trip to York, Mr. John Edwards
- 4 Prince Oroneau, ditto
- 5 Euphemia, Mr. Burman

Premier Carnation.—Lord Ranelagh, Mr. H. Steward.

Premier Picotee.—Haidee, Mr. Dodwell.

Our readers will, on examination, see what flowers are found most frequent in the stands, &c., which, in general, testifies of their first-rate excellence, and thus constitutes a guide to purchasing.



IN THE FLOWER GARDEN.

Rose-trees must be planted directly. Prune the open-air kinds of the *hardy class* now, and the tenderer sorts next month. Perennial and biennial plants in the flower-bed may be divided. Plant out Hollyhocks and any of the biennial plants. Pink-beds: see that the plants remain secure. Carnations and Picotees: if mildew attack the leaves, sprinkle with sulphur. Manures should be laid over the roots of Roses, removing a few inches of the earth, filling up the hollow with well-rotted cow or hot-bed dung, and sprinkle it over with soil, so that it may not dry.

About the middle of the month, if the weather be dry, plant Ranunculuses and Anemones five inches apart, an inch and a half deep from the crown to the surface; and if the soil be dry, after planting, press the surface with a flat board. Be careful that Tulips be *firmly* secured in their positions, so that they be not damaged by wind. A small protection against strong wind should be provided on the bed side most exposed. Heartsease should have a similar protection. And those plants which are to be grown in pots for Exhibitions must now be put into the blooming-pots in rich loam. Now is the time to make a plan of the flower-garden, parterre, &c., and to mark each bed with the kind of flowers required, and then to prepare a stock to furnish accordingly, whether from the sowing of seed or otherwise, as with Verbenas, &c. Protect the early buds of Tree Peony, &c. Sow some of the hardy annual seeds in borders for early bloom in dry situations.

IN THE FORCING STOVE OR FRAME.

Sow seeds of tender annuals, as Balsam, Amaranthus, Cockscorn, &c., in pots, and the half-hardy kinds, as Asters, Stocks, &c., either in pots or upon a bed of soil, &c.

Cuttings of Fuchsias, Alonsoas, Ragwort, Calceolarias, Cupheas, Salvias, Heliotropes, Geraniums, Lotus, Bouvardias, Anagallis, Verbenas, Petunias, and such like plants, for the open beds in summer, should immediately be struck, or the plants will be too weak to answer the purpose. If cuttings were put off in autumn, they should now be potted off singly into small pots; any long ones amongst them should be stopped to induce laterals and make bushy plants.

Dahlia roots should be immediately put to force stock, and seed be sown in pots. Lobelias be potted singly, to have them vigorous by turning-out time. Boxes and pots of Mignonette for succession should be sown. Achimenes, Gesnerias, Gloxinias, &c., be introduced, to promote their immediate growth, and as soon as they have pushed, pot them, singly. Amaryllis, &c., be excited in like manner. Pot Tigridia pavonia and T. conchiflora into small pots. Sow seed of the Chinese Primrose, and as soon as the plants are fit to pot off do so in a rich compost; keep them in heat for a short time, and never water them over head. Calceolarias be encouraged, to have them large; they, as well as Cinerarias, succeed best when grown in a warm, moist, airy pit-frame, kept at about 56° of temperature. Fumigate with tobacco, to have the plants free from green fly; do it immediately one is seen. Fuchsias required for exhibition should now be cut in, so as to have them a good shape, and after having pushed a little, be re-potted, thinning away all unnecessary shoots.

IN THE GREENHOUSE, &c.

Pelargoniums, to be superb specimens, should be re-potted into their blooming pots (read the several Articles on their culture in previous volumes); they must have a free circulation of air around the plants; it gives vigour to the shoots and prepares them for a higher temperature afterwards without injury, and a stronger bloom is produced. The one

ear old plants headed down last autumn, will have produced young shoots now, a few inches long; thin them. In order to have a succession of bloom, now stop the shoots; this will induce the production of lateral ones, which will come into bloom after the first race of plants have ceased, and continue to a late period of the season. A few more plants stopped a month later, will supply to the end of the year. (See vol. xvi. p. 199.) The surface soil in all pots should be stirred up; it tends to health. *Epacris*, *Correas*, *Coromillas*, *Acacias*, *Cinerarias*, and other plants, will now be coming in bloom; water seldom as possible, but when given, let there be as much as will moisten *all* the soil. *Ericas* will still be inactive; give but little water. If any mildew appear, dust with sulphur. *Camellias*, too, should occupy an airy part, and the greatest care should be taken to keep the soil in an *equally moistened* state, using water of a temperature equal to that of the house. Give weak manure-water alternate with the other. *Alstroemerias*, *Lilium speciosum*, and others, should be re-potted.

IN THE STOVE.

Exotic seeds should not be sown.—(See Articles in former volumes). Specimen plants for exhibitions will require re-potting, pruning, &c. *Ixoras* should be elevated, so as to be near the glass, in order to set their bloom; they must have plenty of air at all times convenient.

BRIEF REMARKS.

SUPERB RHODODENDRONS.—(A Ten Years' Subscriber.)—The following will suit well for the bed you mention.

Thompsonii.—Will grow to eight or ten feet high, a noble kind for the centre of the bed. Flowers large, in fine heads, of a rich deep blood colour.

Edgeworthii.—We gave a plate of this fine kind in our last Number. The plant is of medium size, and its very large flowers are strikingly handsome. It is a fine acquisition.

Fulgens.—A dwarfish bushy plant, blooming freely, and the flowers are of a rich glossy crimson, shining as if varnished.

Wightii.—A noble plant, having very large leaves, and it will grow ten feet high, if necessary to have it so. Flowers produced in large heads; they are large too, of a rich yellow, handsomely spotted with red.

Maddenii.—resembles *Edgeworthii* in its large white flowers, tinged with rose. It will grow six to eight feet high, and the leaves a bright green.

The above are kinds which Dr. Hooker discovered at the Sikkim Himalayas, and recently introduced into England, quite hardy, and may be procured for a few shillings each, according to size.

Cunninghamii.—Of medium size, having large heads of fine-sized flowers, white, beautifully spotted with black.

Aureum punctatum.—Of medium habit, flowers in large heads, a fine primrose, beautifully spotted with red.

Towardii.—Flowers shaded light pink, handsomely spotted with crimson, superb form, and in large heads.

Jacksonii.—Bright rose, blotched and striped, beautifully spotted, free bloomer.

Alexandrina.—Pure white, free bloomer, dwarf.

Queen Victoria.—Dark claret and purple, fine compact heads of flowers. Of medium habit, very pretty.

Usbridgeensis.—Light peach colour, fine heads, and superb shapes, dwarfish plant; fine.

Superbissimum album.—Blush, edged with pink, and beautifully spotted.

Maculata grandiflora.—Vigorous plant, flowers in large heads, dark maroon, finely mottled; handsome.

Pictum.—White, beautifully spotted and marbled in the throat. Of medium habit, free bloomer.

Wilsonii.—Superb rich deep scarlet, numerous spotted with brown.

Reginum.—Beautiful blush, compact heads, and very handsome.

Venusius.—Large flowers, of a rich blood-red colour; very fine.

Guttatum.—Delicate blush, beautifully spotted with green and red spots.

GNATS.—Smoke of any kind will drive away gnats; if you burn brown paper in a room where they are, they will settle, and seem to become so stupefied as not to be troublesome again for some hours.

A VISIT TO THE CAPE OF GOOD HOPE AND VAN DIEMEN'S LAND. By J. B.—How I thought of home at the Cape, that paradise of flowers! Though the first bloom was over on my arrival, yet enough was left to show what had been, nor without seeing can you imagine the profusion. There are actually no weeds. Our favourite little blue *Lobelia* is the chickweed of the place; the ditches and all damp places are filled with Cape *Lilies*, *Heaths* of all colours, the *Erica*, I believe *coccinea*, growing very high, *Diosmas*, *Crassulas*, &c., &c. I saw a great deal of the Cape; we were above a fortnight there, and travelled about a hundred and eighty miles into the interior. With the general appearance of the country I was disappointed; there are no trees. The silver tree, a *Protea*, is the highest indigenous plant that I saw. There are oaks in and about Cape Town, Constantia, Wynberg, &c., and, indeed, wherever a house is built, a few trees are planted for shade; but the country, for miles, has nothing higher than heath, and for the greater part of the year is sterile-looking. But in the season the whole face is covered with flowers; and such a face! Fancy acres of *heaths*, of all colours, interspersed with *Gladiolus*, *Ixias*, *Watsonias*, *Babianas*, *Lachenalias*, &c., without end, all growing and flourishing in their native luxuriance. Some bunches of *Mesembryanthemums*, near Sir Lowry Cole's pass, were actually too bright to look at. I lived in one constant whirl of delight, that ecstasy in which we behold perfection. I could not see fast enough. Most of the *Ixias* were out of bloom, but their remains were like patches of a hay-field in seed, only the stems closer together. Myrtle hedges were eight and ten feet high; the one I saw at Sir John Herschell's must have been more, and as close and substantial as our best holly hedges. We visited Villette's and Baron Ludwig's garden, but where the whole country is a garden, these were of less interest. The *Melia Azedarach*, with its sweet lilac blossoms, is a beautiful and ornamental tree, which I did not see wild. We visited the Constantias; Great Constantia is beautiful, the soil is white, and looks like lime and sand intimately mixed. I thought of our gardeners' recommendation of lime rubbish for vines.

To the Cape, Van Diemen's Land is a direct contrast. This is a country of hills, fringed to the very top, and perhaps about the thickest vegetation in the world. All is evergreen, and one dense mass of gloom. At first sight it is sombre enough, but, like a dark beauty, it has its charms; the wood is chiefly "gum" (*Eucalyptus*), growing to an immense height, and throwing its long white arms about in a wild *Salvator* style. The young "gums" are beautiful, and their new shoots of reddish brown lightening into a paler hue, and deepening into myrtle green, with the light new shoots of the "wattle" (*Acacia*), give a rich beauty of colouring, delightful to the eye of a painter. Nature here must be painted to the life; there is nothing to soften.

There is a harshness and dryness in the texture of vegetation here that is very peculiar; even their kangaroo grass (*Anthistaria Australis*), which is considered so nourishing, is hard and hairy, or rather wiry. The flowering shrubs are extremely pretty, but the flowers are very small. The *Epacris impressa* is in great quantities everywhere, but *Heaths* have not as yet been successfully cultivated here, and there are none native. The soil is very dry. But cultivation of any kind is only creeping in. A Horticultural Society has been formed at Launceston, and it is to be hoped knowledge and emulation may thus be excited. With science and judgment everything and anything may be done here: wherever English trees are planted there they flourish, but they are few and far between. The Sweetbrier is now seen in the woods, and grows to an immense size. The quantity of flowers and fruit, such as they are, is beyond belief, but there are none of the best kinds. Think of grafts here bearing the first year, an earnest of what might be. I succeeded in bringing here alive, but in bad health, the *Lilies* of the Valley; four leaves are green, the only morsel in the southern hemisphere.

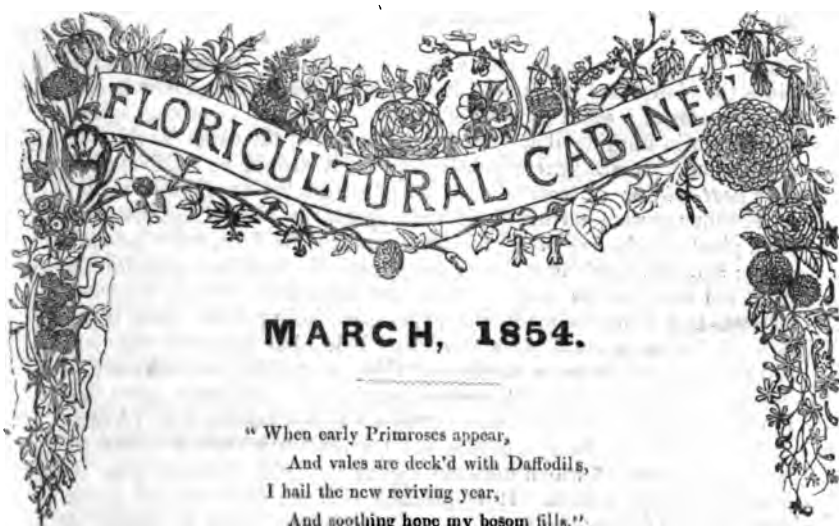
ON A NEW WHEELBARROW, BY CAPTAIN F. WILSON.—In this barrow the wheel is placed under, and is sunk into the bottom; so that the weight rests on the wheel and not on the hand, and there is less oscillation. By means of this barrow it was stated that twice the usual weight can be wheeled.

RUELLIA CILIATA.—I am particularly partial to this plant when in bloom; its profusion of large light-blue and black flowers, standing erect, like the Spring Gentian, are exceedingly attractive, especially so in contrast with its small Heath-like foliage. When properly grown, it forms a neat bush. I saw one at the Chiswick Horticultural Show, three years ago, that was about half a yard high, and two feet across, in robust health and profuse bloom. Since that time I have purchased several small plants, but cannot succeed to grow them well. I should be obliged by any reader giving me, as soon as possible, instructions how to treat it successfully.—AN ARDENT ADMIRER.



1. *Calceolaria alba*.

2. *Linum grandiflorum rubrum*.



ILLUSTRATIONS.

1. LINUM GRANDIFLORUM.—2. CALCEOLARIA ALBA.

THIS very brilliant-flowered LINUM is a native of Algeria, and was originally discovered near Masacura, growing in *heavy land*, by the French botanist, Desfontaines, who called it *Linum pulcherrima*, and it first bloomed in France at the Paris Jardin des Plantes, in the summer of 1848. In consequence of mismanagement, it appears that the first plants failed to produce seed; but from a second importation of seed plants were raised, which have produced a somewhat liberal supply of seeds. Desfontaines stated, that in its native situation "it threw up *clusters* (several from the same root) of erect, or bending stems, from eight to twelve inches high, producing a profusion of flowers, borne in loose panicles."

Hitherto it has been cultivated as an *annual*, but, strictly speaking, it is perennial, similar to the common perennial flax; but as it would require in England to be protected in winter, it will of course be more readily cultivated as a *hardy annual* in the warmer parts of this country, and in other parts as a *half-hardy*, pricking out the plants as is done with the Phlox Drummondii, &c., or potting three or four in a sixty-sized pot, and turning them out with entire balls into the open bed or border in April.

During the two or three years' experience with the plant in France a suitable mode of treatment has been ascertained, and M. Ysabeau records in the *Revue Horticole* the results of his experience, and states, "This pretty annual was figured in the *Revue Horticole* of November, 1848. The plant bears a profusion of flowers, which remain *long* in

bloom; it is consequently one which is greatly to be recommended. Since the above date it has been lost in most gardens, and now is only in the hands of a small number of amateurs. Messrs. Courtois, Gerard, and Vilmorin imagine that they have discovered the cause of the disappearance. It was generally believed that it should be cultivated in *pure peat-soil*, or at least in peat mixed with a little vegetable mould, or common garden earth. This soil appears to be too unsubstantial for a plant which, like other *Linums*, requires much vegetable nourishment; and this nourishment not being supplied in sufficient quantity, the plant did not ripen its seeds, and eventually perished. Messrs. Courtois, Gerard, and Vilmorin made the experiment of pricking some plants into the open ground, in a border of light, but tolerably rich soil, containing much more nourishment than peat-earth, either pure or mixed. This experiment succeeded perfectly. Although sown and pricked out somewhat late, the plants are at the present time (August 2nd) covered with flowers, having well-formed ovaries full of seeds, the perfect ripening of which does not appear doubtful, judging from the good state of the plants. It is probable that the cultivation of *Linum grandiflorum* failed from the excess of precautions taken to ensure its success; if the plant had been treated the same as other hardy annuals which are sown in beds or under glass, and pricked out into the borders, it would have perpetuated itself without difficulty."

Some attempts have been made to sell this plant under the name *Linum splendidissimum*, Vill. We deem it necessary to add, that there is one or more of blue-flowered varieties sold under the name of *grandiflorum*, and in order to distinguish the one we now figure, some of the seedsmen have put the additional name of *rubrum*, and designate it *L. grandiflorum-rubrum*. It is one of the most charming plants that has been introduced of late years, and ought to be in every flower-garden. And it will, we suppose, also prove to be an ornamental plant for decorating the greenhouse during the summer.

2. *CALCEOLARIA ALBA*.—This very charming *Calceolaria* is a native of Chili, which was first discovered and noticed by Ruiz and Pavon. It is what is termed a shrubby species, growing about half a yard high, very branching and bushy. Its numerous narrow leaves, of a rich green, are exceedingly neat, and give the plant a compact, but elegant appearance. Its numerous panicles of pure white flowers contrast prettily with its rich green foliage, and render it very attractive. It grows very freely, and young plants raised early in summer, and becoming hard wooded before winter, are easily preserved if kept in a cool and dry pit-frame or greenhouse. It flourishes when grown in pots, and it appears very likely to succeed well grown in the open flower-bed in summer; if so, it will be a charming bedding plant. We have not yet tried it in this way, but intend to do so the coming season. It would make a charming contrast with the *new* yellow-flowered, which Messrs. Standish and Noble possess, and was noticed by us in the February Number; both kinds merit a place in every greenhouse or flower garden.

Mr. Lobb discovered the plant, too, during his travels in Chili, and sent some it to Messrs. Veitch, of Exeter.

NOTES ON NEW OR RARE PLANTS.

AMOMUM DANIELLII.—Belongs to the natural order of *Gingers* (Zingiberacæ). It is a native of the Gold Coast and Slave Coast of Western Africa. With us it requires the heat of a moist stove. The stems grow about two and a half feet high; leaves, oblong lance-shaped, nine inches long. The short flower scape rises at the bottom of the stem, close to its side, and is sheathed with large, red, boat-shaped scales, from within which appear in succession from three to five flowers, large, and richly coloured. The outer *sepals*, fine red; the spreading *labellum*, whitish, tinged with rose and yellow. Each (gaping) blossom four inches across. Figured in *Botanical Magazine*, 4764.

GOLDFUSSIA GLOMERATA SPECIOSA (Synonyme, *Ruellia glomerata*).—A native of Silhet, requiring to be grown in the stove. It is an erect, strong, branched plant, growing about half a yard high. The tube of the flower is an inch long and nearly half an inch through; between cylinder and funnel-shaped. The front of the blossom (Limb) is five parted, an inch and a half across, of a rich deep purple colour. It blooms very freely and very showy in the autumn months. Figured in *Bot. Mag.*, 4767.

WARREA QUADRATA.—THE FRAGRANT.—A rare and handsome flowered stove Orchideous plant, said to be a native of Central America. Dr. Lindley notices its affinity with *Warrea discolor*, both in habit and form, but the flowers of *W. quadrata*, Sir W. J. Hooker states, are "larger and more fleshy, with no purple but in the centre and upper half of the lip. It is essentially known by the appendix at the base of the lip being nearly square, about three-toothed in front, and deeply furrowed; whilst that of *W. discolor* is uniformly digitate in all specimens I have seen." The flower scapes are erect, not rising so high as the leaves, but about six inches, each bearing a large, drooping, sweet-scented flower. *Sepals* white, or pale-greenish straw colour; *petals*, same colour; *lip*, very large, white with a broad purple margin and a few purple streaks at the centre. Each blossom is about two inches and a half across; very pretty. Figured in *Bot. Mag.*, 4766.

CISSUS DISCOLOR.—We have noticed in former Numbers this most lovely twining plant, but having seen it in bloom induces us again to introduce it. It is a native of Java, and when trained horizontally in a stove where it is brought close to view, no other plant that we know is equal to it for beauty. The leaves are long heart-shaped; each when full sized is about five inches long, the upper side of a bright velvety-green, mottled and marbled with a silvery-white; and the underside of a rich red-purple. The branches are of a coral-red colour; the whole producing a most striking contrast and very handsome appearance. The flowers are produced in small cymous heads, at the joints where the leaves are, but on the opposite side of the stem to the leaf-stalk. Each head of blossoms is about an inch across, and contains about a dozen very small four-lobed, fleshy flowers, of a pale yellow colour. The plant is admirably adapted for training round a number of sticks or wire frame; thus coiled it soon covers the support and becomes very

attractive. It succeeds well in the greenhouse during summer, and in a warm dwelling-room window all the year. Every admirer of a pretty plant ought to possess the *Cissus discolor*. Figured in *Bot. Mag.*, 4763.

CHEILANTHUS FARINOSA (Synonyme, *Pteris argentea*).—A very handsome FERN, a native of Arabia, Abyssinia, and the Indian mountains in general. It flourishes in a pot in a temperate greenhouse. The leaves are from six to ten inches long, pinnate, and the lower pair are bipinnatifid, of a *dark green* above, and the underside *white*, beautifully powdery. It is exceedingly neat, and worth a place in every greenhouse or *Wardian-case* in a dwelling room. Figured in *Bot. Mag.*, 4765.

SPIRÆA CALLOSSA (Synonyme, *Spiræa Fortunei*).—It was first introduced from China into England, by John Reeves, Esq., and subsequently by Mr. Fortune. It is a hardy shrub, somewhat like *Spiræa bella*, but the terminal branching cymous-heads of flowers are much larger than those of the last-named species. They are of a deep ruby-purple colour, and being produced in profusion are very ornamental. Each head of bloom is six to eight inches across. It merits a place in every shrubbery. Figured in *Flore des Serres*, by Mr. Van Houtte.

ROSE, GLOIRE DE DIJON.—A superb new TEA-SCENTED ROSE, which obtained FIRST PRIZES (golden medals) at the Grand Exhibitions at Dijon in 1852, and Paris in 1853. The judges at Dijon gave it the name it now bears. It is a vigorous growing plant, blooms profusely, and each flower is about five to six inches across, full double, and of a transparent yellow, tinged at the edges with a salmon colour, and the underside of the petals is salmon coloured. It is most deliciously fragrant, and the form of first-rate excellence, much like the flowers of *Souvenir de la Malmaison*. We suppose Mr. Van Houtte will be able to supply plants this season.

PETUNIA STRIATA FORMOSISSIMA.—This is a *most beautiful* variety. Each blossom is about three inches and a half across, and of fine form. The ground is *white*, and sometimes the blossom is *marbled*, whilst others are *sprinkled* over or neatly *striped* with rose or carmine, and the throat having a tinge of blue, handsomely streaked. It merits a place in every flower garden or greenhouse. Mr. Van Houtte has plants for sale at a very reasonable price; and also offers thirty-two other new and very superior varieties, thirteen of which are remarkable on account of the various beautiful markings of their colours, and the others are celebrated for the *large size* of the flowers.

ROSE GLOIRE DE PARTHENAY.—The shoots of this fine rose are *deep green*, and the spines are *red*, which produce a pretty contrast. The form of the flowers is like those of the well-known and much-admired *Rose du Roi*. The colour is a delicate blush centre passing to a rich lively rose colour to the margin of the petals. The underside of the petals is nearly white. It is a seedling raised from seed saved from the very handsome one, Duchess of Sutherland, and produced in the garden of M. Alizart, of Parthenay, in France. It is of first-rate form and excellence, and no doubt will soon be offered for sale by Mr. Van Houtte and other continental nurserymen.

CULTURE OF THE CHRYSANTHEMUM.

BY MR J. SHEPPARD, FOREMAN IN THE GARDENS OF THE MARQUIS OF BATH,
AT LONGLEAT, NEAR WARMINSTER.

I need scarcely advance anything in favour of this beautiful autumn-flowering plant, as I feel confident those who are fortunate enough to have become acquainted with it will not easily relinquish their culture; and those not already possessed of a collection, will find this an excellent time to make their purchase; for what can be a more salutary employment than cultivating the beautiful and bounteous gifts of our Creator? It is apt to lead a contemplative mind, in the language of Shakspeare, to

"Find tongues in trees, books in the running brooks,
Sermons in stones, and good in every thing."

We are principally indebted to our brethren on the Continent for the many improvements made; likewise to our principal nurserymen for bringing them before us. Could we but get them to seed in this country, we should undoubtedly have a more numerous variety, and very likely possessing what in England are considered perfection in form. Their culture is so simple, that those of the humblest pretensions may indulge in it; a common garden frame being all that is requisite, in the way of glass, providing it is of sufficient depth for head-room.

The cuttings should be taken off about the first week in April; they may be either inserted in cutting-pans or thumb-pots. Preference should, however, be given to the latter mode, as they receive no check after re-potting. They should be partially filled with a nice rich mould, adding a little coarse sand on the surface, slightly damp them, and insert a cutting in each pot, plunging them in a nice bottom heat, keeping close till fairly rooted; after which give air gradually till they become a little hardened. They may then receive a shift into pots known as large sixties; and if convenience will admit, they may again receive the benefit of a slight bottom heat; if not, keep them close for a few days, after which give air on all favourable opportunities. As soon as they have taken well hold of the soil, stop them to within a few joints of the bottom; this will be found to keep them bushy; shift them on as they become rooted into forty-eight sized pots, using *three* parts of a good strong fibrous loam, three parts to *one* part of well decomposed cow manure and a little sand. After potting, let them be plunged nearly to the rim of the pot, either in coal ashes or in the open ground, duly attending to them with water; for if *once* permitted to become *dry*, their leaves will *turn yellow* (for want of this necessary attention how often do we see plants with long *naked* stems?) and eventually fall off. They must be shifted again, as soon as well rooted, into thirty-twos, or if *wanted large*, twenty-fours, using the same kind of compost; and if the *large flowered varieties* are grown, larger pots must be used. Let them be again plunged, after which little more will remain to be done, beyond supplying them with *manure-water*

twice weekly, and clear water as they require it. Neatly stake them out, to prevent their being broken.

Very large plants may be obtained by planting them out early in the open ground, and taking them up *after setting their flower buds*. Care must be exercised in this operation, otherwise they will flag. Dull showery weather should be taken advantage of for this: pot in a good rich soil, and place them in the shade of a north aspected wall; and if not showery, frequently syringe them. I have grown the large-flowered varieties in this way without losing a leaf, and they were admired by all who saw them. If wanted for decorative purposes, in small pots, I recommend the Pompons (or Minimas), propagated as late as August. They will form little gems for the drawing-room; and if a few pots of Mignonette are added, it will impart to the whole a charming fragrance, at once exhilarating and delightful.

The following descriptive list of kinds comprises what will give a striking variety, as well as containing most of the *best* out.

Pompons.—Drine-Drine, fine soft yellow; Bijou de Horticulture, creamy white; Atropos, crimson; Atala, fine rose; La Fiancée, white; La Lapajou, deep yellow centre, edged with red; Sacramenta, orange-yellow; Lais, crimson-purple; Graziella, rosy-blush; Madame Jules de Gory, white shaded with yellow; Perfecta, lilac; Adonis, rosy-purple. *Large-flowered varieties*.—Temple de Solomon, fine yellow; Madame Poggi, crimson-chestnut; Nancy de Sermet, white; Queen of England, blush-white, fine; Princess Maria, rosy-lilac; Annie, canary-yellow; Pio Nono, mixed red or scarlet; Dupont de l'Eure, carmine orange; Jenny Lind, rosy-buff; Duke, blush; Campestroni, plum-coloured; Gluck, golden-yellow, fine.

PLANTS ADAPTED FOR FORCING, WITH REMARKS ON THEIR CULTURE.

BY MR. JAMES MAYOR, GARDENER TO E. LISTER, ESQ., CASSIA LODGE, OVER
CHESHIRE.

FORCING in general is a very important yet interesting branch of our profession; without this artificial method flowers in winter would be scarce indeed. Attention to the following rules generally gains success. *First*, that plants intended for forcing should be subject to a preparatory system, depending upon the character and requirements of the plant: *secondly*, that they be introduced into heat no higher than is necessary for the gradual development of the flowers, &c.; and *last*, but not least, is attention to watering, which should be assiduously attended to, as many plants suffer exceedingly from injudicious applications of water.

SCARLET GERANIUMS being generally admired, we cannot do better than begin with them. *Propagation* is easy, consequently we shall pass over it to the time of planting out in spring. A certain number

of the strongest plants are selected and re-potted into No. 8 pots, the compost being equal portions of sand, leaf-mould, and turfy loam. They are then plunged into some open bed or border, where they remain until about the middle of September, when they are taken up for a final potting. The roots will be found perfectly matted, which is the object we aim at in confining them to pots through the summer; the size of pot for this last shift must entirely depend on circumstances, as the space allowed them, &c. The ball must by no means be broken during the operation of potting, as it would counteract the effects of our preparatory system. The plants being potted they are put into some cool frame or pit for several days and shaded during the middle of the day, then transferred to the house in which it is intended they will remain over winter. Attention to air, watering, &c., are all that is now wanting to ensure a profusion of their beautiful flowers.

CALCEOLARIAS (Bedders).—Doubts have been and still are entertained, as to the practicability of flowering these in winter, but such as exist must ultimately be removed. These, like the preceding ones, require preparing in summer; indeed the treatment throughout is the same, with the exception that these are kept a little cooler and supplied more abundantly with water. Green-fly are particularly fond of exercising their destructive and devastating powers on these plants, but daily watering *overhead* will not only prevent them making their appearance, but will be highly beneficial to the plants altogether. They should be kept as near to the glass as possible, as they are apt to get long legged, long jointed, &c. With these, as with the last, care should be taken to preserve the extremities of the shoots, for on these we depend for the principal part of the flowers. Amongst the best as *forcers* are, *Amplexicaulis*, *Kentish Hero*, and *Floribunda*, but nearly all will flower well if proper attention is paid to them in summer.

HELIOTROPICUMS.—These are great favourites at all times of the season, but particularly in *winter*, being in point of colour so very different to the majority of our winter flowering plants. In bouquets they are almost indispensable: they will continue fresh and beautiful a considerable length of time after their natural support is withdrawn. Their almost universally admired perfume is sufficient to secure them a place in every plant structure.

The summer treatment differs a little from the foregoing ones. In spring, cuttings are inserted in compost of sand and leaf-mould, round the edges of pots; and when rooted they are potted in compost of loam and leaf-mould, and though allowed to move on, by being re-potted occasionally, they are *pinched rather severely*, to produce plenty of short-jointed shoots. Towards the latter end of August this pinching is entirely given over, and they are re-potted to remain over winter; the compost being the same as above, with the addition of sand.

By the time they are introduced into heat, which may be in October, the plants will have made a considerable amount of new shoots, all of which, as far as is practicable, should be retained. When the plants show flower, liquid manure should be given copiously.

(To be continued.)

MIGNONETTE CULTURE.—BLOOMING SPECIMEN PLANTS.

BY J. F. FRY, OF ROCHESTER.

I was much struck with the article in the last month's Number of the *Floricultural Cabinet* on the culture of the Mignonette plant, which I am sure will be highly appreciated by every lady gardener, as this charming plant may be justly termed the ladies' delight. I think, however, Mr. Mayor might have gone somewhat farther, and informed us a little about the nature of this plant, where it originally came from, the number of varieties, and if an annual or perennial, &c. As I have given some attention to the culture of this beautiful plant, a few more hints as to its treatment may not be unacceptable.

We find that the Mignonette plant is a weed in Egypt, from whence it was taken to France about the year 1740, and there given its present name—*little darling*. In 1742 it found its way to Windsor, and soon afterwards became very general in this country. There are, it is stated, as many as twelve varieties, though all of that number are not known to us.

My mode of cultivating these plants in pots, as specimens, is as follows, and it will be seen to differ somewhat from the treatment recommended by Mr. Mayor. In the month of June take up as many plants from the garden as you require; let these be short and stubby, and not longer than two inches; pot them singly into 4-inch pots, and shade for a few days. Do not allow the plants to be in the *full sun* at any time during the summer, but place them out of doors under a *shady* wall or hedge. They will only require an occasional watering, and stopping of the shoots, till the month of August. In August shift them into 6-inch pots, and shade as before; and should the shoots be very thick, peg them down and out from each other. They will thus go with but little water and frequent stopping till the month of October, at which time they may be potted into their blooming pots, the size I use being 8-inch ones. Still exercise the finger and thumb, and in December you will find you have *short-jointed* and *nicely grown* plants. The soil I find to be most suited for them is loam, peat, and a little dung from an old hot-bed, well mixed, but not sifted. They require a generous drainage and very little water. Keep the plants out of doors till November, weather permitting, then place them as near the glass as possible.

By the mode of treatment above described I have, at the present time, plants of twenty inches in diameter, and one mass of bloom from the top to the bottom, and as nice little specimen plants as ever were taken to an exhibition, and in pots amply large enough for any strong lady to move about.

Mr. Mayor informs us, that it is only a summer plant, but for my part I think he will find it is not an *annual* but a *perennial*, and can be grown as many years as required with proper care and attention.

As *seed time* has once more arrived I shall feel glad if, in the above hints, I have sown only *one seed to advantage*.

REMARKS ON MESEMBRYANTHEMUMS.

BY MR. JOHN CHARLTON, LONGLEAT GARDENS, NEAR WARMINSTER.

THE name of this handsome and much-admired genus is derived from *mesembria*, mid-day, and *anthemon*, a flower; mid-day flower or noon flower, because the flowers of most of the species *close* in the absence of the sun, and *expand* in broad sunshine.

Three hundred and twenty-four species have been discovered; most of them are natives of the Cape of Good Hope; a few, however, are from New Holland and New Zealand. Thunberg informs us, that the bushmen in Caffraria and other parts of the Cape often build their temporary huts with bushes of *Mesembryanthemum*, in which they live as long as their food lasts. They have a species called the *M. edule*, of which they eat the fruits, which they call "Hottentots' Figs." He mentions another species, of which he says, "*Kon* was a name given by the Hottentots to a shrub that grew here, viz., *Mesembryanthemum Emarcidum*, which was famous all over the country. The Hottentots come far and near to fetch this shrub, with the root, leaves, and all, which they beat together, and afterwards twist them up like pig-tail tobacco; after which they let the mass ferment, and keep it by them for chewing, especially when they are thirsty. If it be chewed immediately after fermentation it intoxicates. The word *Kon* signifies a *quid*; the colonists call it canna-root. The Hottentots hawk it about, and exchange it for cattle and other commodities. Some of them smoke it also." Thunberg also speaks of another species, of which "the fruit was sometimes brought to town as a rarity, and was called *Rosa de Jericho*. When it is put into water it gradually opens all its seed-vessels, and exactly resembles a *sun*; and when it becomes dry again, it contracts itself, and closes by degrees."

This charming family of plants not only comprises some that are useful for native purposes, but a vast number that are exceedingly *beautiful* and *interesting* as *ornaments* for the greenhouses and flower-gardens of our own country; and it would be both pleasing and instructive to give the *descriptive particulars* of the whole. That I must leave for another month's Magazine.

One of the most *interesting* kinds is the *Mesembryanthemum crystallinum*, the *Ice plant*, or *Diamond-fig* *Marygold*, which is so much admired for its *ice-like* covering; the leaves, stems, and buds, are apparently crusted over with *silvery ice*. From its glittering surface it is by some called the "Spangled Beau." This species comes from the neighbourhood of Athens, and is more general in our gardens than any other kind; it certainly is entitled to such introduction.

M. variable is another handsome species. It changes the colours of its flowers; on first opening they are an orange-saffron colour, then yellow, which fades to white, with a tinge of red, and a red mid-rib; lastly becomes a fleshy-white, and red tinged outside.

M. versicolor is rosy-red in the morning, pale silvery in the middle of the day, and rosy-red again in the evening.

Many of the most showy are especially ornamental and showy for

the flower-garden. Just fancy a bed of them being actually *too bright* to look upon (see page 48 of last month's *Magazine*, where their brilliancy in the Cape of Good Hope is mentioned.) They are admirably adapted for bedding, baskets, vases, and rockwork.

The plants are very easy of cultivation, and although they will not withstand severe frost, they can be preserved through winter with very little trouble.

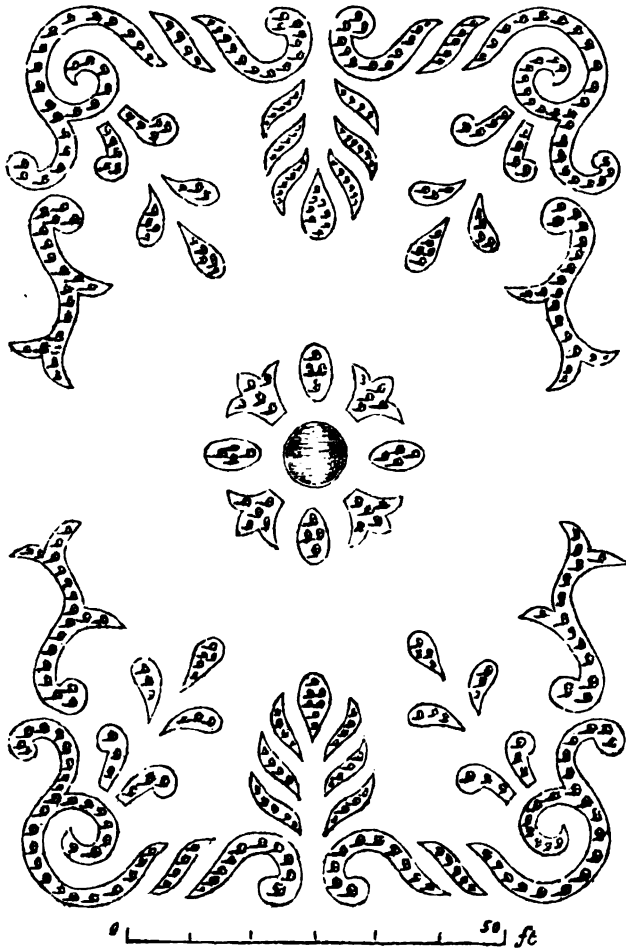
Cultivation. — The best time to increase them is *autumn*, when cuttings should be taken, and be placed in a frame or under a hand-light, in either of which places they will readily root. After pushing roots, they must immediately be potted singly, into sixty-sized pots, and placed in a cool frame or upon the end-shelves in a greenhouse, and have but sparingly of water, as during this season of repose *much water* would destroy them.

Early in March they must be re-potted, in a soil composed of *fresh loam*, a little leaf-mould, and a small portion of sand; after which they must be kept *close* for a few days, and their growth duly promoted there till the last week in April or the first week in May (as the mildness or otherwise of the season dictate), when they may be planted (out of pots) in as *sunny* a situation as possible. It is best to have the bed of compost laid upon a bottom of large pieces of broken stones or bricks, in order to keep the *soil* well drained, and which will consequently be much warmer for the roots, and in proportion promote the *blooming* of the plants. After they are thus planted out, a few hoops should be placed over the bed, upon which to spread a covering, such as a mat or canvass, to protect them during night in case of frost occurring, as of late years the seasons have been late and the weather precarious; and a few short sticks should be pricked among the branches, or be pegged down, to secure them from being injured by wind.

Till the plants root afresh into the soil of the bed, particular attention must be given to let them have a little water upon the old ball of soil, and afterwards as the dryness or otherwise of the summer render necessary. Similar attention as to compost, drainage, and protection from casual frost in spring, is requisite with those plants grown in vases, or upon rock-work, where they are especially interesting and beautiful. In any situation, when in full display of bloom, they present a fine appearance; the rich and varied brilliancy of colours, coupled with the almost solid mass of flowers, renders it gay indeed, and will amply compensate the cultivator for any attention bestowed. A few plants of the most showy blooming, in order to propagate from, may be procured at a trifling cost by those persons who have not a stock at present, or to plant out as above described during the approaching summer.

PLANS OF FLOWER-GARDENS.

No. 14.—By T. RUTGER, Esq.



ALTHOUGH there is a scale given with the accompanying design, a deviation may take place in accordance with the taste of the proprietor, by enlarging the clumps in proportion to the ground given for the purpose. Should the design be laid down on gravel, the scale given may suffice; but if on a lawn, an enlargement of the clumps may take place; and if enclosed with a shrubbery, embellishments of various kinds may be introduced in the interior, which may also take place, should the design be laid down on gravel.

THE RENOVATION OF GRASS LAWNS, &c.

BY MR. PETER MAKENZIE, OF WEST PLEAN, NORTH BRITAIN.

" The spring, the new, the startling spring appears,
The youthful season of reviving years ;
The trees grow fruitful with descending rains,
And, drest in diff'ring greens, adorn the plains."

BUT the dark green colour of the grass in flower-gardens and pleasure-grounds is sometimes long a-coming, although it has a pleasing effect and adds greatly to the beauty of the pleasure-ground and flower-garden.

This often happens when the grass on lawns becomes weak and thin by means of frequent cutting, and little nourishment imparted to the soil ; the consequence is, that mosses take the place of the grass, and unless something is done to arrest their progress, they will soon overpower those plants that were intended to have a permanent place in the meadow or lawn. An American writer remarks, that mosses on meadows, like vermin on cattle, are a consequence rather than an evil ; they indicate a deficiency of stamina, health, or condition, in the field or animal, rather than induce it themselves. But where either exist, they show something radically deficient, which must first be remedied before any useful result can follow. A cultivator may as well leave his money with "sharpers," or his manure heap under a spout, as his meadows in moss, or his cattle covered with vermin. All are spendthrifts together, and if left to themselves will, like Pharaoh's lean kine, soon consume his evidences of previous plenty, and show no equivalent in return. But how are we to get rid of mosses in meadows or lawns ? Let us first see how they get there. The surest way to get rich is first to know how you get poor. Mosses are generally the result of a feeble growth of the grass on a moist surface. The moisture of the land is not of itself objectionable, but decidedly the reverse ; but when the profitable occupants of the soil fail, or become thin or meagre, the profitless are ever ready to come in and supply their places. This is the case with mosses ; and it is not till the cultivated plants have declined that these have gathered strength. Various plans have been used to destroy moss on lawns. Sowing strong quick lime over them when recently mown, or after short cropping by animals, is attended with decided advantage. Guano, when mixed with mould, and sown broadcast, is exceedingly useful ; and so, too, are compost heaps of various kinds ; these help to destroy the mosses by invigorating the grasses. Properly draining, and especially thoroughly underdraining the lands, is one of the most efficient modes of removing mosses and worthless aquatic plants. By carrying off all surplus, and particularly stagnant waters, the atmosphere and heat penetrate the soil and induce a vigorous healthy growth of the cultivated plants, and thereby withdraw so much of the space and food which otherwise would be monopolized by the intruders. Another simple and sure method for improving the growth of grass on lawns is the following :— During the summer season well decayed peat may be dried by exposure

to the sun; when the moisture is well evaporated steep the peat in urine, or drainings from the dunghill, and when the lawn is mown for the last time for the season, the peat may be finally broken and spread upon the lawn; and if it is afterwards raked and rolled, it will be all the better. Such a dressing will improve the grasses during the winter months, and in spring they will grow more vigorously than if more materials had been employed. It is also of importance to have lawns sown with proper kinds of grasses. The following table from "Lawson's Treatise on the Cultivated Grasses," &c., may be of use to those who are about to make improvements in flower-gardens and pleasure grounds. It shows at a glance the kinds and quantities of grass seeds required for sowing; the imperial were for fine lawns, bowling-greens, &c., kept constantly under the scythe.

Scientific Names.	Light Soils.		Medium Soils.		Heavy Soils.	
	With a Crop.	Without a Crop.	With a Crop.	Without a Crop.	With a Crop.	Without a Crop.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
<i>Avena flavescens</i> ..	1	1	..	..	..	..
<i>Cynosurus cristatus</i>	5	5	6	6	7	7
<i>Festuca duriuscula</i> ..	3	3	3	3	4	4
<i>Festuca tennifolia</i> ..	2	2	2	2	1	1
<i>Lolium perenne tenui</i>	18	20	18	20	18	20
<i>Poa nemoralis</i>	1½	1½	1½	1½	1½	2
<i>Poa sempervirens</i> ..	1½	1½	1½	1½	1½	2
<i>Poa trivialis</i>	1½	1½	1½	1½	1½	2
<i>Trifolium repens</i> ..	6	7	6	7	6	7
<i>Trifolium minus</i>	2	2	2	2	1	1
	40½	44½	41½	45½	42½	46

The following remarks are added. In cases where primary expense is deemed secondary to ultimate effect, two pounds of the evergreen wood-meadow grass may be added to each of the above columns; and where the ground is shaded by trees, both *Poa nemoralis* and that variety should be substituted for similar quantities of the two *Fescues*, such quantities being dependent on the extent and depth of the shade.

In walks, bowling-greens, &c., which are wished to be kept as dry as possible, especially towards the end of the season, *Trifolium repens* should be sparingly introduced; and when it is intended to mow the grass by machine, instead of the common scythe, greater proportions of the *hard* and *fine-leaved Fescues* may be sown.

" When Damon softly trod the shaven lawn,
Damon, a youth, from city cares withdrawn,
Long was the pleasing walk he wander'd through;
A cover'd harbour closed the distant view;
There rests the youth, and while the feather'd throng
Raise their wild music, thus contrives a song."

His song was of health, and began with

"Here, wafted o'er by mild Etesian air,
 Thou country goddess, beauteous Health repair;
 Here let my breast through quiv'ring trees inhale
 Thy rosy blessings with the morning gale;
 What are the fields, or flowers, or all I see,—
 Ah! tasteless all, if not enjoyed with thee."

MISCELLANEOUS SECTION.

THE FALL OF THE LEAF.—The two most interesting periods to one who is in the habit of associating some agreeable sentiment with the phases of nature, occur when the trees are putting forth their tender leaves and flowers in the opening of the year, and when they are assuming the variegated hues that precede the fall of the leaf. Hence the spring and the autumn have always been regarded as pre-eminently the two poetical seasons—the one emblemizing the period of youth, the other that of old age. But to the eye of the painter as well as the poet do these two seasons offer the greatest attractions. In the spring, while the leaves are bursting from their hibernacles, and unfolding their plaited forms, they exhibit a great variety of tints, which are constantly changing with the progress of their development. In autumn, during a space of about two weeks, they pass through another succession of hues; and this change, connected with the fall of the leaf, has given rise to many pleasing sentiments, which have been woven into the poetry of all nations. It is a common fallacy to regard those objects as the most picturesque which have the least positive beauty: but landscape painters, actuated by a different opinion, have, for the purpose of adding a picturesque charm to the scenes they portray, most frequently chosen the autumn for their representations, and given to their trees the beautiful tints of the declining year.

If we would learn the full comparative value of trees, as ornamental objects, it is necessary to study them under the different aspects they assume during each of the four seasons. They should be observed in May and June, when they are putting forth their leaves and blossoms; in July and August, when they have completed the growth and maturity of their foliage; in October, when they are hung with fruits, and are assuming the tints that precede their decay; and lastly, in December and later, when they appear in their denuded state, and have lost all their beauty, except that of the forms and arrangements of their branches. Under each of these aspects, they are a study which cannot fail to reward the observer, by affording him many new ideas, which will assist him in comprehending the beauty and grandeur of vegetable forms and colours.

The season of the fall of the leaf commences, in general, about the 20th of September, and varying with the character of the weather, continues until near the third week in November. It occupies a space of about two months, and may be divided into three periods. The first includes the time between the 20th of September and the middle of the next month, when the maple, the elm, the hornbeam, the hickory, the beech, and the chestnut, are in their full splendour. During this

period the yellow, orange, and scarlet hues predominate in the tints of the foliage. The second period occupies a space of about two weeks from the end of the first, when the oaks have fully ripened their tints, and many of the trees just named have become leafless. This period is remarkable for a predominance of red, crimson, and purple hues in the colour of the foliage; and it lasts until about the 7th or 10th of November. The third period commences with a succession of severe frosts, that destroy all the remaining tints of the forest, and change them into one uniform and monotonous brown. This period may be said to terminate with the early snows of winter, and is remarkable, in some years, for a series of warm days which have been called the Indian summer.

All those who are accustomed to note the successive changes in the face of Nature, must have observed that the different species of trees and shrubs lose their leaves at different dates in the autumn, some being entirely denuded, while others hardly exhibit any change in their foliage. It may be further remarked, that some species preserve their verdure until their leaves drop to the ground; among which we may class a great proportion of exotic trees and shrubs. Others roll up their leaves into a crisp before their fall, like the most of the herbaceous plants, without materially changing their colour except by fading. Such are the ash, the locust, and the shellbark hickory. The leaves of a third class, without wilting or withering, change from green to some brilliant colour, and make their beauty the harbinger of their decay.

Those trees in general that exhibit the earliest and brightest tints, are the first to lose their leaves. This is observable especially in the maples, whose tints of yellow, orange, red, crimson, and purple, are conspicuous, while the leaves of most other species are still green. No sooner have other trees, for the most part, assumed their autumnal hues, than the maples have already become leafless. While the latter are still wearing their gayest robes we may observe the hues of yellow, orange, and brown of the common American elms. The tints of the elm are neither so brilliant nor so various as those of the maple. They consist only of a few shades of brown and yellow, which partake of that want of brilliancy that characterizes the verdure of the same tree. It is worthy of notice, that while these trees are thus gleaming with gold, the English elm still retains the greenness of its foliage almost as pure as in summer. The same difference may be observed between the greater part of the indigenous trees of America and those of England and the continent of Europe.

This habit of European trees has led many persons to prefer them, for ornamental purposes, to their kindred American species. A few additional weeks of verdure in the foliage of our trees, though it would not retard the approaching cold, would be a prolongation of one of the pleasant advantages of summer. But it ought not to be overlooked, that if the American trees do not continue in leaf so long as those of Europe, they greatly exceed them in the brilliancy and variety of their autumnal hues. The cause of the superior beauty of our autumn hues, is undoubtedly the greater *intensity* of the sun's rays, and the greater

proportion of clear and dry weather, causing the leaves to arrive *sooner* to maturity and old age. Should we, therefore, substitute foreign trees with their prolonged verdure, for our indigenous trees, with their early fading leaf, we should have autumn without its present charms. Nature, in the fall, would then resemble an old man without those silvery hairs, which are the crowning ornament of his years.

Among our trees the maples exhibit the greatest variety in their tints. Of different individuals of the same species, even when growing, side by side, in the same situation, not unfrequently some will have foliage of a bright yellow, others of vermilion, some of scarlet and crimson, while others still retain their summer verdure. In this respect the maples differ from other trees, of which individuals of the same species seldom greatly differ in their tints. Notwithstanding, therefore, the rapidity with which they lose their foliage, these trees are the principal charm of our woods during the first autumnal period. The elm succeeds the maple in the ripeness of its hues and the fall of its leaves. The American poplars lose their leaves about the same time: but their tints, though more brilliant than those of the elm, are confined to the lighter shades of yellow. The birch, the beech, the chestnut, and the hickory, all of which are clad, with more or less brilliancy, in yellows, succeed the poplar. Similar hues predominate in the lime, the larch, the cherry, and the wych-hazel.

But there are several species in which the different shades of red and purple prevail. Among these may be named the swamp hornbeam, which is one of the most brilliantly illuminated trees in our woods. In the shade its leaves are of a bright orange; but when exposed to the direct rays of the sun, they vary from vermilion to scarlet, seldom, I believe, approaching to purple. Like other brightly-tinted foliage, that of the hornbeam falls early in the season, seldom remaining above a week in its full splendour. While the yellow tints predominate in the trees, the reds and crimsons predominate in the shrubbery. Conspicuous among these are all the species of the blueberry and whortleberry tribe, that yield a fairy-like splendour to our wild upland pastures. Equally beautiful and more brilliant are the leaves of the common creeper, that often covers whole trees in our woods, mingling its pure scarlet with the different colours of the tree that supports it. The most of the sumachs exhibit a predominance of purple in the hues of their foliage, mixed with their original verdure. The viburnums and cornels are likewise variously shaded with purple and crimson.—*Hovey's Magazine of Horticulture.*—(To be continued.)

COLLODION, ITS UTILITY IN THE PROCESS OF STRIKING CUTTINGS OF PLANTS.—It is well known to gardeners, and other cultivators of plants, that in the process of striking cuttings of most plants it is essential to success to prevent an undue admission of moisture or air to a cutting through the medium of its *cut base*; and to accomplish this various methods have been tried to seal up the base with bees'-wax, glue, gutta percha, &c.; but these materials soon dissolve, and a space is left, which, before being dissolved the plaster occupied, and thus the cutting was in a worse position than if it had been inserted without such application. A short time back Mr. Low, of Clapton,

thought that if *collodion* was used for the purpose of sealing the base of a cutting, the desired object would be realised, and thus render the much more certain success of cuttings striking root; for as *collodion* is adhesive, impenetrable by water, and impervious to air, it would not only endure, but otherwise answer the desired purposes. He therefore made experiments with it, and states in a paper of particulars, recently read before the Royal Society, "That immediately upon the cutting being severed from the parent stem, the *collodion* was applied to the wound, and then left a few seconds to dry, after which the cuttings were inserted in a pot in the usual manner."

In order more effectually to test the value of the process, duplicates of all the kinds of cuttings under experiment were at the same time *similarly inserted*, but without the *collodion* being applied to them. Also experiments were tried in two different ways, viz., one batch of cuttings being placed on a hot-bed, and another batch inserted in the open ground, without having a covering of glass. It was late in summer when these experiments were made; but double the number of cuttings struck root under the *new method* of treatment to what rooted by the *old process*, being without *collodion*. By the wound of the cutting being *thus sealed*, it is preserved from the injurious effects of excess of moisture, air, &c., until roots protrude through the *collodion*. It is thought likely to be of equal utility in the process of grafting, budding, &c., of fruit and other trees or plants, as Camellias, Rhododendrons, &c. The effect of *collodion* with cut specimens of flowers was tried, and two branches, as nearly alike as could be, were obtained; to one the *collodion* was applied. Both specimens were placed in vases filled with water; those to which the *collodion* was applied faded in thirty-six hours, and many died in three days, whilst those without *collodion* remained at the end of three days fresh and healthy.

We intend to give additional particulars relative to this subject in our next Number. The result of the experiments with the cuttings experimented with was as follows, as given in the *Gardeners' Chronicle*.

First Batch.—All of which were placed on a hot-bed on the 1st of October, and examined on the 1st of October:

STOVE PLANTS.

Number of Cuttings with Collodion applied.	Name of Plant.	Number of Cuttings which took Root.	Number of Cuttings without the Application of Collodion.	Number of Cuttings which took Root.
1	<i>Ixora coccinea</i>	1	1	0
1	<i>Tacsonia miniata</i>	1	1	1
3	<i>Franciscea Hopeana</i>	3	3	0
3	<i>Franciscea Pohlana</i>	3	3	0
2	<i>Gloxinia Maria Van Houtte</i> ..	0	2	1
2	<i>Begonia incarnata</i>	2	2	1
8	<i>Achimenes patens</i>	7	8	6
2	<i>Hoya bella</i>	2	2	1
2	<i>Rondeletia speciosa</i>	2	2	1
2	<i>Allamanda neriifolia</i>	2	2	1

GREENHOUSE PLANTS.

Number of Cuttings with Collodion applied.	Name of Plant.	Number of Cuttings which took Root.	Number of cuttings without the Application of Collodion.	Number of Cuttings which took Root.
6	Boronia serrulata	5	6	0
3	Polygala Dalmaisiana	1	3	0
6	" grandiflora	3	6	2
6	Verbena luna	6	6	6
1	Chorozema cordata	1	1	0
1	Epacris pallida	0	1	0
2	Leschenaultia formosa	2	2	1
1	Swainsonia astragalifolia	1	1	0
1	" galegifolia	0	1	0
	Abelia rupestris	2	2	0
4	Plectranthus concolor picta....	2	4	2

Second Batch.—Planted in the open ground on the 1st of September, and examined on the 1st of October :

HARDY PLANTS.

Number of Cuttings with Collodion applied.	Name of Plant.	Number of Cuttings which took Root.	Number of Cuttings without the Application of Collodion.	Number of Cuttings which took Root.
12	Garrya elliptica	5	12	1
12	Erica vagans	7	12	4
18	Bupleurum longifolium	6	18	0
12	Laurus foetens	10	12	7
6	Rose, Souvenir de la Malmaison	4	6	8
12	{ Taxus baccata, golden-leaved variety	8	12	4
	Total Number of Cuttings to which Collodion was applied.	Number of Cuttings which took Root.	Total Number of Cuttings without the Application of Collodion.	Number of Cuttings which took Root.
First batch	59	46	59	23
Second batch	72	40	72	19

Collodion is made of *gun-cotton* dissolved in *ether*. It becomes a *clear* solution, and may be purchased in bottles at sixpence per ounce, which in quantity is about two large table spoonfulls, and would be sufficient for application to an immense number of cuttings. The cut end of the cutting being dipped in, say one-eighth of an inch deep, will have, on its being drawn out, a clear, thin, adhesive skin or covering, to that extent, which will be a perfect safeguard.

TREE CARNATIONS.—The vast improvements which have been made in the production of hybrid plants, during the last twenty years, in the Dahlia, Pelargonium, Calceolaria, Petunia, Verbena, &c., have been generally displayed, as our *Exhibitions* amply testify; but the most extraordinary, I think, has been effected with the *Tree Carnations*. But a few years ago, we had only two kinds, a self-coloured crimson-red, and one with a flesh-coloured ground striped with crimson. Now we have an immense number of varieties, selfs, stripes, blotched, edged, and marbled with nearly all colours; and not only are they handsome, but many of them highly fragrant. They are, too, very easy of cultivation, and may be had in bloom the *entire year*. I possess forty-four varieties, and find them to flourish admirably in the following compost:—Equal parts of a yellowish *fresh* turfy loam, well broken in pieces by the hand, and kept rough; and well rotten leaf-mould and *old* dryish cow-dung, with a sprinkling of silver-sand and bits of charcoal and broken pot; these, well incorporated together, and having a free drainage. Those *grown in pots* do well in it. Last spring, however, I turned out a quantity into an open border, in front of a low brick wall, of good loam, and mixed it with the above-named manure; the plants were trained to the wall, which had a *south-west* aspect, and they bloomed most beautifully from May to the end of November, when I had them taken up carefully and potted; and they have continued to bloom during the winter in my (rather warm) greenhouse. They are readily propagated by cuttings of the *half-ripened* shoots, cutting through close under a joint, dressing off a few of the lowest leaves, and inserting them in a pot well drained, upon which is placed good compost, and about three inches of silver-sand above it, in which the cuttings are inserted. If they have a little bottom heat, it contributes to an early striking of roots, and they may or may not have a bell-glass over; but, in either case, shade from mid-day sun. Cuttings will strike freely during spring or summer; but March and April is the best period. The plants grow quickly, so that you may have them any height you please; but to keep them *bushy*, the leads must be duly stopped, and then vigorous low plants will be obtained. All are free bloomers, beautiful and ornamental; and as they may be grown successfully in a greenhouse pit-frame, or even dwelling-room window, every lover of flowers ought to have some of them.—*Dianthus*.

CULTURE OF THE CHINESE PRIMROSE.—I generally sow my seeds about the beginning of August, or a little earlier, in shallow pans, in light sandy soil, without any manure. They are sown thinly, and pressed down on the surface, so as just to be covered with the soil. After a gentle watering, the pans containing the seed are removed to a hotbed, where they remain until the young plants are about an inch in height. At this stage, they are pricked out into the same sort of pans, an inch apart, adding this time one-third leaf-mould to the soil. The plants are put into the hotbed again, until they have attained the height of two inches, when they are taken out of the pans, and shifted into five-inch pots, that have been well drained. The compost for this and their final shift consists of equal quantities of cow dung, two years old, leaf-mould, peat earth, and sandy soil. After potting, the

plants are removed into a cold frame, with an eastern aspect. The lights are kept close for a few days, and the plants are shaded from the mid-day sun until they commence growing. Air is then admitted, gradually at first, but as soon as I perceive the plants to be fairly in a pushing state, I ventilate freely. The sashes are, however, always put on when it rains, for nothing is so injurious to primulas as water overhead, at any stage of their growth. As they begin to fill their pots with roots, I gave them liquid manure once a week, made from pigeon's dung. I permit the first flower stem to rise, but only for the purpose of judging of the merits of the flower. As soon as that is decided, the good flowers are picked out, and when the pots are filled with roots, the plants are finally shifted into eight or twelve-inch pots, and treated in precisely the same way as at the former shifting, and with the same situation and aspect. They remain in the cold frame until the middle of October. After that, they are brought into their winter quarters, to flower in the greenhouse. As soon as the plants have stopped growing, I withhold the dung water, as a continuance of it would be likely to destroy them in the winter months.—J. H.—*Gardener's Chronicle*.

CALCEOLARIAS.—The *Show Class* I find to flourish quite extraordinary, when growing in the following compost, &c. I have a liberal drainage of crocks, upon which I place a little rough moss, then fill up with the compost, which consists of *equal parts* of a year old *turfy-loam*, well broken by the hand, well decayed leaf-mould, and old rotten pulverized cow-dung (hot-bed dung will do if this is not provided), and a sprinkling of bits of charcoal and silver sand. In potting, I place them rather low in the pot to admit of an addition of fresh compost, as many roots often afterwards push from the bottom part of the main stem, and greatly contribute to vigour. The plants require a liberal share of syringing over-head, as well as under the foliage; but when in bloom, the flowers are avoided, and the plants require shading from ten in the morning to four in the afternoon. When blooming is over, I cut the bloom branches off close to the foliage, and plunge the pots up to the rim in fine-sifted coal-ashes in a border where there is *shade from sun*, but a freedom of air, and fill up with rotten leaf-mould, so that the stalks of the lower shoots of the plants are partly in the soil. They soon throw out roots, and when sufficient, I have them potted off singly, and put under a close hand-glass in a shady place; if now exposed to a current of wind it would be likely to destroy them. I shift any vigorous ones into a size larger in October, when I take all in to preserve through winter, for if kept in too small pots, it often causes the plants to run into bloom prematurely. During winter I keep them in a cool, but quite dry, pit frame, rather near to the glass, and give all air possible, so as to preserve them from frost.

Seedlings.—I sow the last week in July, pot as soon as large enough, keep them in a low frame, close till well established, and then give abundance of air, and in winter they are kept with the stock plants, in the pit frame. There is a hot-water pipe along the front (outside) of this pit, so that I give a little heat to dry up, if necessary, or just to keep out frost.—JAMES BUCKLEY.



WE refer our readers to the last month's Calendar for many things which require attention now. Finish pruning Roses. Many kinds of shrubs may be increased by layering, similar to Carnations. Perennial herbaceous plants increase by division. Hardy annuals, to bloom early, may be sown. Bedding plants must be provided by sowing, striking cuttings, repotting last autumn-struck cuttings, &c. Sow Stocks, Asters, &c., in pots or beds.

FLORISTS' FLOWERS.—*Auriculas* and *Polyanthuses*: admit air on all favourable occasions. Manure-water should be given once a week. Sheep's-dung, put into a tub, and soft water poured upon it, in quantity so as to form a strong liquid, is very serviceable. The dung must be collected for a few weeks before using. Old cow-dung will also answer the same purpose. Sow seeds of above. If too many blossoms show, thin them directly. *Anemones* and *Ranunculuses* must be finished planting immediately. If no bed has been prepared for them, it may be made by taking out the soil to the depth of fifteen or eighteen inches, and replacing it at the bottom with a layer three or four inches thick of cow-dung, and filling up with soil composed of decayed turfs taken from a loamy pasture. Such as were planted in the autumn will now be making their appearance above ground. It is very necessary to keep the soil closed firmly round the crown of the plant; when this is neglected, the bloom suffers. *Tulips* require continued attention, as directed last month. Any that happen to be affected with canker will appear sickly; the roots should be examined, and the damaged part cut clean out. If left exposed to sun and air, the parts will soon dry and heal. Avoid frosty air getting to the wound by exposure. If by any casualty the plants are frozen, then, early in the morning, sprinkle the tops over with cold water, and keep them covered over for an hour or so before they be exposed, as the sun must not be allowed to shine upon them until the frost is all out. *Carnations* and *Picotees* may, at the end of the month, receive their final shifting. The pots known as No. 12's are the size usually employed. In potting, place at the bottom two inches deep of crocks, and give free drainage. Use a compost—which is best if it has been previously prepared and become well incorporated together—of these proportions,—two barrows full of fresh yellow loam, three of well-rooted horse-dung, and half a barrowful of river-sand, well mixed; plant in it *without sifting*, by breaking very well with the spade. Place the plants in a sheltered situation out of doors, but where they will have *plenty of air*. Where frost has disturbed the roots of *Pansies* in beds, they should be pressed into their places, and a top-dressing of rich mould given to them all over the bed. They must be screened from cutting winds by fir, yew, or whin branches. In forming new beds, the situation must be where there is the benefit of free air. Plants in pots, under glass, will require shifting into larger sizes; for as this is the period when they begin to grow, they will soon become weak, and bloom out of character, if confined in small pots. If beds of *Pinks* were not planted in autumn, early in this month they may be. In removing the plants, whether out of pots or open ground, be careful to retain all the ball of roots, and as uninjured as possible. Protect beds from cold easterly winds. Press the soil firm round the plants.

IN THE FORCING STOVE.

Sow seeds of any tender and half-hardy annuals that have been omitted. Sow liberally of *Cinerarias* and *Chinese Primroses*, for if the plants be properly attended to, they will produce a fine bloom for autumn. Annuals sown in frames—*Cockscombs*, *Balsams*, *Thunbergias*, &c.,—if large enough to pot, should be in 60-sized pots.

Sow seeds of *Dahlias*, *Fuchsias*, &c. Seeds of most greenhouse plants will do well if sown now. Repot and forward *Amaryllides*, *Achimenes*, *Glorinias*, *Gesnerias*, &c., as directed last month. *Ipomeas*, *Echites*, and similar plants, may be trimmed in, disrooted when necessary, and brought here to excite early growth. *Isorais*, and other plants for exhibitions, duly attend to in tying out, &c. Repot any plants requiring; prune in, &c.

THE PRESENT BEAUTY OF THE WOODS AND HEDGES.—I am a London resident clergyman, with but few opportunities of enjoying walks in the country; but recently visiting for a week in the neighbourhood of Dorking, Reigate, and Godstone, in Surrey, I was much delighted in my perambulations with the profusion of Primroses which, in some instances, composed a close carpet of bloom to entire woods of large extent, as well as adorning the banks of the hedges and road-sides. The perfume, too, was most delicious. The *Alders* and *Hazels* I very much admired; the profusion of drooping *Cathartes* were exceedingly graceful and ornamental, affording a rich treat to a contemplative mind. It brought to my recollection the following beautiful lines of the poet, which added to the pleasure I had previously enjoyed:

"Now *hazel cathartes*, and the bursting buds
Of the fresh willow, whisper'd Spring is coming;
And bullfinches forth flitting from the woods,
With their rich silver voices; and the humming
Of a new-wakened bee that pass'd; and broods
Of ever-dancing gnats again consuming,
In pleasant sunlight, their re-given time;
And the germs swelling in the red shoots of the lime.

"All these were tell-tales of far brighter hours
That had been, and again were on their way;
The breaking forth of green things and of flowers
From the earth's breast; from bank and quickening spray,
Dews, buds, and blossoms, and in woodland bowers,
Fragrant and fresh, full many a sweet bird's lay,
Sending abroad, from the exultant spring,
To every living heart a gladsome welcoming."

A Citizen.

FLOWER GARDEN ORNAMENTED IN WINTER WITH EVERGREEN SHRUBS.—A pretty flower garden, in connection with one of the Lodges, has its beds closely filled with the shrubs, &c., as named below. The plants are from one foot to two, *busby*, and the appearance is admirable, producing a cheerful effect, and well worth imitation.

Phillyrea, *Aucuba*, *Lauristinus*, *Narrow-leaved Dwarf Laurel*, *Portugal Laurel*, *Red Cedars*, *Mahonia*, *Holly*, *Berberis*, *Arbutus*, *Heaths*, *Irish Heath*, *Box*, *Chinese Privet*, *Pinuses*, *Rhododendrons*, *Arbor Vitæ*, *Cotoneasters*, *Double Whin*, *Andromedæ*, *Rosemary*, *Hemlock Spruce*, *Juniper*, *Yew*, and *White Cedar*. —*Kew*.

HOLLYHOCKS (*Clericus*).—Your old roots will soon be pushing young shoots; when about three inches long, cut some of them off close to their origin, insert one of each in a small sixty-pot, in equal parts of loam, leaf-mould, and rough sand; place them in a cool frame, shade from sun, and keep the frame close for ten days; then give air gradually. They will be rooted in five or six weeks, and re-pot when required. Such plants will be fine to plant out in October for next year's bloom.

CORREA (*Clericus*).—They bloom through the entire winter and spring, and are highly ornamental for the greenhouse or sitting-room. There are more than thirty kinds, of various colours and forms, as red, white, green, crimson, cream, pink, purple, sulphur, rose; most of them have blossoms of two or three colours. They flourish best in the following compost: three parts of good fibry turf-peat, one part of good turfy-loam, a year old; to which add a liberal sprinkling of silvery sand, and some bits of charcoal or stone, all to be well broken up, not sifted.

JAPAN LILIES.—*Lilium lancifolium*, &c.—When grown in pots, to make a fine show, the pot should be from twelve to fifteen inches across, and rather deeper than usual. A liberal drainage must be given, placing moss upon the crocks, then fill up to six inches below the rim, with a compost of equal parts of good turfy loam, rough fibry peat, and well-rotted cow-dung, with leaf-mould for the third part; then press firmly into the top of the compost three or four bulbs at equal distances, and just cover the bulbs. When the stems have risen some height, and rootlets just begin to push from the stems, fill the pots up nearly to the rim with the same compost. Water in proportion to growth, every third watering to be with liquid manure of medium strength. Let the plants be where they can have abundance of air, so they are drawn up, but grow robust. A frame deep enough will do, or the most suitable place in the greenhouse. —*A Nobleman's Flower Gardener.*



Polygonum vacciniifolium.



"Hail, April, hail! With cheerful tone
I bid thee welcome: not alone,
For thou com'st and bring'st along
The sight, and smell, and tuneful song,
Of leaf, and flower, and mingled hue,
And many a plumed warbler new:
But that, with holy wisdom fraught,
Thou wak'st, withal, the grateful thought,
That when these pleasant things are o'er
Things still more pleasant are in store."

ILLUSTRATIONS.

POLYGONUM VACCINIIFOLIUM.—WHORTLE-BERRIED KNOTWEED. (*Persicaria*).

"——— Their rise they boast
From India's deserts, or Columbia's coast."

THIS neat and handsome blooming plant was first discovered by Dr. Wallich's collector, Mr. Blinkworth, at Bhuddrinath. Major Madden, too, found it in the country extending from Buschur to Kumaon, at elevations from 11,000 to 13,000 feet above the level of the sea, and both Dr. Hooker and Dr. Thomson met with it in eastern and western Himalaya. Dr. Royle, however, first introduced it into England. It is a very free-growing, hardy, herbaceous perennial, the stems usually rising about five to six inches high, but by growing it in very *rich* soil, it will rise even to a foot high. It is perfectly hardy, a low-growing neat plant, and by its numerous slender stems, trailing along the ground, and rooting at the joints, it soon forms a spreading compact patch. It is a most profuse bloomer, and the leaves are almost concealed by the very numerous spikes of bright rosy-red coloured flowers. It blooms continuously from Midsummer to the end of November, and even later when the season is favourable. It is a charming plant for a *small* bed, and if raised gradually to the centre, will have a pretty effect; or having the soil richer at the middle portion than the sides,

the plants will rise higher in proportion. This method is best when the season proves very dry, unless, in the former case, due attention is given to watering. It makes, too, a very pretty edging to a bed or walk-side, and is easily kept to any desired breadth; also suits in a vase or urn of plants, or in a moist part of a rock-work. It will certainly become a great favourite, and merits a place in every flower-garden, and as it can be had at a cheap rate, we doubt not will soon become an ornament in every one.

The common garden *annual*, *Persicaria*, *POLYGONUM ORIENTALE*, too, is, when well grown, a very elegantly handsome blooming plant, and entitled to a place in every flower-garden or border. Scarcely any plant equals both the brilliant red flowering species, or the delicate white-flowered variety, and when in contrast they have a pretty effect. A number of it are grown in the beds in the Royal Gardens at Kew, and according to the poverty or richness of the soil is the stature of the plants, the largest growing about four feet, and having fine branching heads, produce a charming appearance, as also they do when even of the lowest size, about two feet. They are easily raised by seed sown in the borders in spring, and continue to bloom till the end of Autumn.

The celebrated botanist, Tournefort, first noticed it growing in the Prince of Teslis's garden, in Georgia, and he afterwards procured seeds from the garden of the monks of the three churches near Mount Ararat, the spot on which the ark constructed by Noah is supposed to have rested, and, in consequence, the *Persicaria* has been denominated the "*Emblem of Restoration*."

The Duchess of Beaufort appears to have been the earliest cultivator of it in England, it having been introduced by her grace in the year 1707; and it is recorded, that in her grace's garden the plants were allowed to scatter their seeds in autumn on the soil, which being dug in a few inches to protect them in winter, the plants spring up early in spring, and being in rich soil attained the height of from eight to ten feet, with spreading branches in due proportion.

In order, too, to form them into such tree-like specimens, at an early period of their growth, some of the lower side shoots were cut away, and, by a little successive attention, very admirable plants were produced. We have seen large plants of them rising up in the shrub border, and the elegant branching heads of rich-red flowers spreading between the shrubs, made a beautiful contrast with their green foliage, and continued ornamental through summer and autumn.

NOTES ON NEW OR RARE PLANTS.

EXACUM MACRANTHUM, LARGE-FLOWERED. Natural Order *Gentianeæ*.—This very lovely flowering plant is a native of Ceylon, seeds of which were sent, two years ago, by Mr. Thwaites, to the Royal Gardens at Kew, and to the Glasnevin Botanic Garden, Dublin; in the latter it has bloomed. It has been cultivated hitherto in the stove, but there is reason to suppose that it will prove to be an *annual*, or *biennial* at most, and probably would succeed the same as our tender

annuals which are planted out in May, and flourish through the summer. The stem rises about half a yard high, copiously leafy below, but more apart upwards, terminating in a corymbose head of flowers, each blossom being five broad-petalled, two inches across, of a deep rich blue-purple colour, and having large bright yellow stamens, produce a striking contrast. It is a valuable acquisition, and merits a place in every stove, greenhouse, and flower-garden. The flowers are much like those of the *Solanum Amazonicum*.—(Figured in *Botanical Magazine*, 4771.)

PITCAIRNIA MUSCOSA, *N. O. Bromeliaceæ*.—Supposed to be a native of Brazil, but was sent from St. Petersburg to the Royal Gardens at Kew. It is of the pine-apple plant appearance, narrow leaves, and the flower stem rises about twice the length of a leaf, terminating in spikes of from six to ten flowers, each blossom about two inches long, having three petals; but they are so united together as to form a narrow tube of a red colour. It has bloomed in the stove.—(Figured in *Botanical Magazine*, 4770.)

SACCOLABIUM DENTICULATUM, *N. O. Orchideæ*.—A stove orchideous plant, which is said to be a native of Eastern Bengal. The late Rev. John Clowes bequeathed his collection of plants to the Royal Gardens at Kew, and this was one thereof. The stems grow about nine inches long, and about as thick as a quill; leaves rather fleshy, about five inches long, lance-shaped, and about one broad at the widest part. The flowers are produced in a corymbose, or almost umbellate, raceme, each containing from eight to a dozen blossoms. Each blossom is about three parts of an inch across, outwardly green, within of an olive-brown, most beautifully spotted with bright-red. The labellum is white, tinged with yellow, and the disc of the lamina is dotted with red. (Figured in *Botanical Magazine*, 4772.)

BEGONIA LAPEYRUSIA.—The plant combines flowers as beautiful as those of the *B. incarnata*, with the vigorous habit or growth of *B. hydrocotylifolia*. The plant is almost covered with its abundance of flowers, of a handsome, delicate pink colour. It is worth a place in every collection.

BEGONIA, New Species from Ceylon.—The foliage is quite a rival to that of the handsome *B. Thwaitesii*, being beautifully speckled and spotted with metallic-like silvery-white. It is in Mr. Van Houtte's collection.

CALADIUM METALLICUM.—A species from Borneo, with beautiful large leaves, having a dark metallic hue.

CEREUS MAC DONALDII.—This magnificent night-blooming *Cereus* we noticed at length in our last Volume, page 99. It merits notice, too, in our present year's Volume. The flower is *fourteen inches* long, and as much across the front when fully open. The tube is green, tinged with brown. At night the blossom expands. The calyx sepals spread and reflex, *red* at the outer side, and orange inside. The petals are white, beautifully tinged with *primrose*, and form a broadish cup inside the deep-coloured sepals. The numerous rich yellow stamens form a circle around the yellow-rayed style. It is a superb species, trained against the back wall of the Cactus house in the Royal Gardens

of Kew. No doubt it would succeed well similarly trained in a dry greenhouse of medium warmth, and it merits a place in every one.

HIBISCUS VULPINUS (Synonyme, *H. astræpæifolius*.)—The leaves are of an *enormous* size, very similar to those of the *Astræpæa Wallichii*. We have not seen its flowers.

MARANTA WARSEWICZII. — The leaves are in size and form similar to those of *M. zebrina* (the zebra plant of some.) The surface is of a rich velvet, beautifully shaded with yellow, upon a deep rich green. The plant has much the habit of a *Heliconia*, and is a most magnificent species. It is in the possession of M. L. Mathieu, of Berlin, and plants, it is expected, will be offered for sale next May. It merits a place in every stove or warm greenhouse.

ACACIA PETIOLARIS.—The leaves are remarkably grand, each being very large, and have an immense number of what are generally termed small leaves, which are thick and strikingly distinct from all others. It is a fine conservatory plant.

ESTERHAZIA SPLENDIDA.—This most beautiful flowering plant is a native of Brazil. It forms a very neat bushy shrub of from two to four feet high. The leaves are in form like those of the *Lavender*, except a little shorter, and of a deep green colour. The flowers are produced in terminal large panicles of forty or more flowers in each terminal head. Each flower is funnel-tube shaped, an inch and a half long, with a five divided limb (the end of the blossom) an inch across, of a rich orange-scarlet colour. It is a free-growing plant, and blooms most profusely; it continues in blossom for a long period. Mikan states it grew vigorously on the margin of the river. Libon states he found it flourishing on the plains and sides of the forests.

It merits a place in every greenhouse, and if turned out into the open ground in a sheltered warm situation early in May, it will bloom throughout the summer. Its generic name was given in compliment to Prince Esterhazy.

METTERNICHIA PRINCIPIS. *N. O. Solanaceæ*. (Synonyme, *Disianthus ophiorrhiza*.) This pretty flowering shrubby plant was also discovered at the same time, and near to the *Esterhazia* last noticed. The leaves are much like a small *Lauristinus* leaf. The flowers are produced in terminal racemes, of from four to six blossoms in each. Each flower is funnel shaped, nearly three inches long, and two inches and a half across the mouth. White. It blooms freely, and is a very ornamental plant in a collection. It flourishes either in the stove or good greenhouse, and merits a place in either. Its name was given in compliment to Prince Metternich.

PÆONIA ARBOREA GERMANICA.—This magnificent **TREE PÆONY** has been received by Mr. Van Houtte, from Japan, from whence it had been forwarded by Dr. Von Siebold. It is said to form a robust tree, of fifteen feet high, and spreads in due proportion. The flowers are large, *double*, deep red, or having a shade of three colours, and highly ornamental. The young foliage in spring is not injured by the cold air, as the kinds we possess in England are liable to; but its stout leaves endure without the least injury being sustained. It merits a place in every suitable garden in this country.

REMINISCENCES OF MY EARLY DAYS AT LONGLEAT.

BY THOMAS RUTGER, ESQ.

REMINISCENCES of former days bring to my recollection old associations, especially those regarding my juvenile years, which were spent at LONGLEAT; consequently, anything that emanates from thence is to me highly interesting, and not among the least is that which is connected with gardening, having been associated with it for a long period. It is, therefore, with pleasure that I see you have contributors from the place of my birth, from whom I trust you may receive many valuable articles for the pages of the CABINET. Enriched as Longleat is with a beautiful flower-garden, articles almost *ad infinitum* might be drawn out of it, interesting as well as instructive, for your valuable periodical.

I was always passionately fond of plants. During my youthful days at Longleat, I had made over to me, during the winter, twelve garden-lights, with their frames, wherein to stow my plants, when, during frosty weather, I was filled with care how to keep out the enemy; mats, with hay, &c., were in high requisition; and nothing could give me greater pleasure than in accomplishing my wishes, in which I generally succeeded.

During these halcyon days, in order to improve my collection of plants, I annually paid a visit to Stourton, the seat of Sir Richard Hoare, about seven miles distant, where the gardener was exceedingly kind, by furnishing me with cuttings of various kinds, particularly of Geraniums, which, even in that day, was a favourite plant at Stourton, and where varieties were continually raised by Sir Richard, who, in his day, was indefatigable in improving his stock. Some of the varieties which he raised were considered first-rate for many years, which I dare say is in the recollection of many; and I question that if, in the present day, some of the varieties now grown are not descendants from some of those raised at Stourton.

It would be out of place here to expatiate on the beauties of Longleat, dedicated as the CABINET is principally to floriculture, otherwise a lengthened article might be given, as there are but few places which can boast of such a variety of scenery—where an ample park, with hill and dale, wood and water, and extensive views in constant variety, are presented to view; added to which, the interesting and picturesque parish of Horningsham adjoining, and forming a part of it, with its several hamlets, adds considerably towards making it one of the most charming places to be visited in the west of England.

[We shall have great pleasure in inserting any particulars relative to Longleat, which Mr. Rutger may please to favour us with, for we are certain it will be both useful and interesting to our readers.—EDITOR.]

REMARKS ON JUSTICIA CARNEA.

BY AN AMATEUR CULTIVATOR.

I have several times noticed that this very beautiful blooming greenhouse plant has been recommended to the readers in the

Monthly Notices of New or Rare Plants; allow me to add my humble testimony, too, of its merits. It is a charming plant for autumn, winter, and spring bloom—and by suitable treatment it is a summer's ornament also. I have the original, true *Justicia carnea*, bearing very large heads of long tube-shaped flowers, of a fine pinky-flesh colour, and a variety of it called *J. carnea rubra*, the flowers being of a salmon-red colour; both are entitled to a place in every greenhouse, or stove also—for they flourish in either. The plant is most readily cultivated, and increased freely by cuttings. It flourishes in a compost of equal parts of rich fibry-peat and loam, with a sprinkling of gritty sand, and fine bone-dust. It must have a free drainage, and occasional watering of liquid manure. In a recent number of the *Gardener's Chronicle*, reference is made by a correspondent to a magnificent specimen which had been grown in the establishment of Mr. Catleugh, under the management of his plant cultivator, Mr. M'Intosh, and which was exhibited at the rooms of the Horticultural Society in Regent-street. The treatment pursued by Mr. M'Intosh is given in his own detailed account. The specimen shown was three feet high, four feet across, and covered to the edge of the pot with its fine heads of flowers, of which there were 156. The following are the particulars Mr. M'Intosh gave:

"The plant was struck in April, and shifted into a 7-inch pot in August, in which it was wintered, keeping it in a cool house, and rather dry at the root. In the beginning of March it was shifted into a 15-inch pot, and placed near the glass, in a house where the temperature ranged from 50° to 60°, with fire heat. Here it was afforded a slight bottom heat, a moist atmosphere, and a free circulation of air whenever the weather would permit. This plant being impatient of an excess of moisture at the root, water was applied very sparingly to the soil, until it was evident from the growth of the shoots that the roots had got good hold of the fresh soil; indeed, beyond syringing morning and evening, very little water was given. The plant is a very rapid grower, and very much inclined to become leggy and thin at the base, which stopping will hardly prevent, as the back buds do not break freely, and the centre shoots always have an inclination to take a decided lead over the others. To remedy this, the shoots were pegged down, bringing them almost close to the surface of the soil, which caused the back buds to push, and when the points of the old shoots turned up and showed a tendency to grow too fast for the others, they were stopped, and any shoot towards the centre, which seemed inclined to rob its fellows, was pegged down, so as to equalise the growth. Early in May the plant produced ten fine spikes of blossom, and was removed to the flower-house, observing, of course, to prepare it for the change. When the beauty of the flowers was over, the spikes were cut off, the shoots shortened, cutting out some of the weakly ones, and it received no water at the root for some ten days, and was placed in a cool airy position. It was now returned to the house in which it was previously grown, freely supplied with water at the root, and received the same attention as to pegging down the shoots, with the view of equalising the growth. The weather being now warm, the lights were entirely

drawn off on bright hot forenoons, but they were replaced early in the afternoon after syringing, thus maintaining a most growing atmosphere at night, and whenever it could be done, avoiding, at the same time, the etiolating effects of a hot shady situation. The buds broke very freely under this treatment, and strong short-jointed shoots were produced. In July it bloomed a second time, when it produced 92 spikes. It was removed to the flower-house, and managed, after the decay of the flowers, as last time, and when rested, placed in a mild bottom-heat. The only different treatment observed this time was to feed the plant with clear weak manure water, which was rendered necessary through the pot having become full of roots, and the soil somewhat exhausted; and as a matter of course the lights were not removed when the weather became so cool as to render this unnecessary. In September the plant produced 156 heads of bloom, in which state it was exhibited."

CULTIVATION OF THE ABRONIA UMBELLATA.

BY MR. JOHN BURLEY, ACACIA NURSERY, ST. JOHN'S WOOD.

THIS pretty, free-blooming, trailing perennial plant derives its name from *Abros*, *delicate*. It is said by some, that all the kinds are outdoor perennial plants; but I purpose now only to treat upon one of the species, and *that*, in my opinion, should, from its tenderness, be classed as a *greenhouse* plant. *A. umbellata* is the species I refer to; it is a beautiful trailing plant, and was introduced into this country in 1823, from California, and the colour of the flower is a delicate violet-rose. It blooms in umbellate heads, very similar in form and size to those of a *Verbena*. The leaves are thick, and of a light green. The flower stalks are long, but of sufficient substance firmly to support the truss of bloom. Nothing can have a neater effect than this plant during the summer, when planted out in a southern or south-west aspect, in a border of light rich soil; it grows and blooms in profusion all the summer and autumn. It will be found, too, to have an equal handsome effect on rock-work; the shoots trailing and blooming as they advance, makes the best possible trailing plant for the summer that we possess. With all its beauty, however, it is apt to go off, and die in one night, without any previous visible cause for its so doing; but the cause, no doubt, is from its not receiving sufficient moisture. When planted near the house, against a wall, or on rock-work, the roots are liable to get suddenly dry, and the plant thereby receives a check, from which it never recovers. To prevent this occurrence, great care should be taken to see that it receives sufficient moisture, either when planted out or grown in pots. The soil best suitable for its growth is, a mixture of sand, leaf-mould, yellow mellow-loam, and peat, in equal quantities. Let them be well mixed, and used in a rough unsifted state. When grown in pots, they should be well drained, and be perfectly clean. It is propagated both by cuttings and seeds. The former mode is the one generally resorted to. It should be sown in shallow pans or pots, well drained, the seeds very lightly covered, and placed in

bottom heat, kept tolerably *moist* until the plants come up, when care must be taken to give them but just enough water to keep them *moist*, as they are apt, *if kept very moist*, to damp or rot off. But propagating by cuttings is the surest mode of increasing them. The young shoots strike freely in silver sand, in a well-drained pot, and kept in a moderate bottom heat for a short time. As soon as rooted, they must be potted into 60-sized pots, in light soil, viz., *leaf-mould and sand*. If the plant be so treated when young, it will be found to start off freely in growth, and will soon make a fine plant; and when it requires repotting, a stronger soil will be necessary, which may be formed by adding loam and peat to the sand and leaf-mould.

REMARKS ON THE RENOVATION OF GRASS LAWNS.

BY THOMAS RUTGER, ESQ.

If it might not be thought arrogant, I would offer as an appendage to the excellent article of Mr. Mackenzie (see page 60 of the last Number of the *CABINET*), on the "Renovation of Grass Lawns," &c., that I have proved soot to be an excellent article for *invigorating* the grass on impoverished lawns, at the same time *weakening the moss* growing thereon. The mode of applying it is merely by hand-sowing, as adopted for wheat or other grain, and to be sown on the appearance of a coming shower. If the sowing be repeated once or twice after mowing, it will facilitate the growth of the grass, so as for it very soon to overpower the moss.

OBSERVATIONS ON WINTER DECORATION OF THE FLOWER-GARDEN WITH EVERGREEN SHRUBS.

BY THOMAS RUTGER ESQ.

I can fully agree with your contributor, "Kew's" observation on the admirable appearance of a flower-garden being ornamented in winter with evergreen shrubs.—(See last Number of the *Cabinet*, p. 72.) If any of your correspondents will turn to vol. xxi., p. 64 of the *Cabinet*, the flower-garden of which the design is there given is now furnished with dwarf evergreens with the most happy effect. Some taste is necessary in so disposing of the plants as to give to the whole the best effect, namely, by the admixture of the different varieties of variegated plants in regard to the *varied tints* of colouring which they possess, and which should be liberally interspersed among the different tints of green, which should also be regarded with respect to their being properly placed, so as to give as much variety as possible in each of the compartments in the garden.

It would be a great advantage to have a succession of dwarf evergreens in pots, so that their removal might take place at any time without being injured, and if replunged in any convenient place, they

might serve for a second, or even for a third year, for the purpose of furnishing the flower-garden in winter, after which they might be turned out of their pots, and planted in the shrubbery.

MANAGEMENT OF CHINESE PRIMROSES, (*Primula Sinensis*.)

BY MR. THOMAS SHORT, GARDENER, ASHTON HOUSE, YORKSHIRE.

THESE charming flowering plants rank amongst the most gay and ornamental of our *winter* and *spring* productions. None can excel them as lovely adorners of the greenhouse and dwelling-room windows during these periods of the year. By the following method of treatment, I have grown them with astonishing success, and can with much confidence recommend its adoption to the readers hereof, and the present period is the time to begin by sowing seeds, &c. I sow the seeds in March, in light loam and peat, equal portions, with a fourth part of sharp sand in shallow seed-pans, and place them in a cucumber or melon frame at work. As soon as they have well braided, I place them in a frame where plenty of air can be admitted, or on a shelf on the peach-house, as they are apt to damp off if kept in a very warm close frame before the plants get strong. When they have got a rough leaf or two, I prick them out into similar pans with the same sort of mould, at about an inch and a half apart. About the middle of June I give them their final shift for flowering. The compost I then use is, turfy-loam, leaf-mould, and peat in equal parts, with a fourth part of the whole of sharp river-sand. With this I shift into six and eight inch pots. The pots are then placed in the front of a cucumber frame for two weeks, or so, shading them from sun till they have begun to grow freely. I then have them removed to a cold frame, giving a due portion of air day and night, till the evenings get frosty, when the frame is shut up at night, and covered with mats.

About the middle of October they begin to flower, when I have about one-half placed on the shelves of the greenhouse; this gives more room in the frame for those left. About the middle of November, when they are mostly all in flower, I have the remainder placed in the greenhouse. They flower better if kept near the upright glass on the front shelf; also near the glass in a room window. The double varieties are propagated by cuttings, which will strike freely in peat and sand, with a little bottom heat and close shading.

I water the entire stock of plants freely after the final shifting for the season, and once a week with liquid manure, the drainings of the dung-hill. In the gloomy months of winter they should be watered sparingly, as when overdone, they damp off at the surface of the mould. A few pieces of white quartz, or small pieces of free-stone laid round the inner margin of the pot on the surface of the mould, help to prevent damping off, and are a good support for the shoulders of the plants. After the plants have done blooming in doors, they may be planted out pretty deeply in beds, and will flower again in autumn.

TREATMENT OF THE KALOSANTHUS (*Crassulas*).

BY A NORTH BRITON.

THE merits of this highly ornamental and easily cultivated class of plants seem less appreciated than they deserve. Considering the ease with which fine specimens are produced in a very short time, they become invaluable for summer decoration. The best time to propagate is in July and August, when the plants are in flower. For cuttings, select some of the best shoots *without flower*. The strongest of the cuttings may be put singly into sixty-sized pots, previously filled with a compost of equal parts of peat, loam, and leaf-mould, with a good mixture of sharp sand to keep it porous. They should then be set in a pit or frame with a cool bottom, where they can be lightly shaded for an hour or two in the hottest part of the day. They will speedily root in such a place. When this is the case, they must be shifted into pots two or three sizes larger, and be placed out of doors where they can have the full sun, to get the shoots *well ripened*, which is of much importance, and where they can stand till the heavy rains render it necessary to house the plants. The Geranium house is the best to winter them in, as similar treatment with Geraniums suits the Kalosanthums, and to be *coolish* and *dryish* are essentials during winter.

By January the points of any shoots that have a tendency to take the lead should be taken off and the plant tied out, but care must be taken as to the supply of water; only just give sufficient at this period to moisten the soil, so as to keep the plant in a healthy condition. By February they will begin to grow rapidly, and by the latter end of March will require another shift, and to be kept in the house till May; they will then require another shift, and may then be placed out of doors in the full sun, having something bound round the pot to keep the direct rays of the sun from injuring the roots. The chief care they require through the summer is *plenty of water* and *pot room* when necessary; also to get the shoots *well ripened*; and if any shoots show a tendency to flower, they (the flower) should be taken off, as they would tend to weaken the plant if allowed to remain, and in like manner weaken the next year's bloom.

In August, the last shift for the season should be given; the plants must be housed in *good time* as before, and wintered in the same manner as last winter. In the latter end of March following they may be put into their flowering pots, which should be large enough to afford them a moderate shift. By May the flowering shoots should be nicely regulated and tied out, and the plants set out of doors in the full sun, which will bring out the flowers gradually, but the colours will be brighter if kept under glass. When in full flower take them to the conservatory, greenhouse, or sitting-room, where they have a slight shade from sun.

In order to have large, bushy and dwarfish plants, attention must be paid during the *early part* of the year to stop the principal leads, to induce the production of side shoots, and if about half a dozen leaves be taken off the stump, when the lead is taken off, the new shoots will push better from the naked part, than if the leaves remained. In order

to obtain a branching plant from the first, cut off one of the naked stumps just described after it has pushed several shoots, (as they usually push as many), and at about three inches below those new shoots cut through, clear under a joint, and insert the stem firmly in, as described for cuttings in the early part of this article; such make nice bushy plants, and with due attention in stopping afterwards, very large specimens may be produced, bearing from thirty to fifty heads of flowers, amply repaying for any attention. I must not close the article without adding, that during the summer season, say from the beginning of May to the middle of August, the plants are much benefited by being syringed (both the under side and upper side of the leaves) early every morning. It preserves them from insects, and greatly promotes the healthy growth of the plants. The best kinds are *K. coccinea superba*, *versicolor*, *vivicans*, and *nitida*.

TREE CARNATION.

BY MR. JAMES SHEPPARD, FOREMAN OF THE GARDENS, LONGLEAT, WARMINSTER, WILTSHIRE.

THIS, like its co-partner, the *show variety*, is becoming very extensively cultivated, and I doubt not but it will become as great a favourite. I know of no plant so valuable to the gardener, for decorative purposes, as this; presenting, independent of its delightful, peculiar fragrance, an almost unsurpassed brilliancy of colour, which we may enjoy the *whole of the year* with comparatively little trouble; consequently it cannot be too largely cultivated, as I feel confident the *haut ton* will gladly appropriate a small space of their drawing-room to form a temporary conservatory, particularly in the dark days of winter, when, in return for their admiring gaze, it is ever ready to greet them with its most inviting delicious fragrance.

Those who intend growing for next winter, should propagate at once, if not already done, selecting cuttings which are in a nice growing state, cutting off horizontally close under the second joint. This mode of propagating the TREE CARNATION is considered by some a very delicate operation; but if the cuttings are judiciously made, scarcely one will fail rooting. Many persons merely trim off the lower leaves, as they would another cutting; hence the cause of failure; the remaining parts, as a matter of course, are doomed to decay; the heel of the cutting becomes contaminated, and the cherished hopes of a plant lost. Whereas by cutting off pretty close to the joint, and carefully peeling the lower leaves off with the thumb and finger, success would have been almost certain. Having the pots previously well drained, place a sprinkling of good friable loam, and cover with about half an inch of sand; slightly damp it, and insert the cuttings, placing a bell-glass over them, gently pressing it in the sand, so as to exclude the air; plunge in a good bottom heat. If no bell-glasses are at hand, keep close until fairly rooted, which will be easily demonstrated by their commencing growth. As soon as rooted, pot singly into 60-sized pots, again giving them the benefit of a little bottom heat to get them estab-

lished, after which let them have plenty of air to keep them stocky. Continue to shift on as they fill their pots with roots, using a good mellow loam, a little decomposed cow dung, and an admixture of silver sand. A common garden frame is all the protection they will require through winter (unless in sharp frost, when they should be covered), and bringing the forwardest, as wanted, into a warmer situation; but if judiciously stopped, they will require little artificial treatment. Those for early flowering should not be stopped later than July; others later in succession.

Those who require them for furnishing tables, &c., in small pots, should get them laid as early in June as circumstances will permit, selecting the strongest layers, and those *nearest* the ground, so that they may be brought to the required position with greater ease. Those otherwise situated may be propagated as cuttings, if stock is short. Let the layers be mostly prepared before pegging down, that they may become somewhat flaccid, otherwise a great many will break off, particularly if in a very luxuriant state. I need scarcely say more on this head, as this is familiar to most persons; we will, therefore, presume them rooted, when they may be taken up carefully, and potted into 4-inch pots: place them in a frame and keep it close for a few days; after which the lights may be taken off. The pots must be plunged, to prevent too rapid evaporation. Assist them frequently with manure-water as they are swelling their buds, for at this time they will be making active demands on the root. Neatly stake them, so as to prevent their being broken, and bringing in the forwardest, at all times, will extend the period of flowering a considerable time longer.

THE PLEASURE-GARDEN OF BLOSSOMING TREES AND SHRUBS.

BY CLERICUS.

(Continued from page 16.)

SOME of the pleasure-gardens of antiquity were created for, and devoted to, the pleasures of the softer sex. Solomon has celebrated those of Jerusalem in song, and the extraordinary gardens of Babylon appear to have been formed by Nebuchadnezzar for his Median queen, who, we are told, could not become reconciled to the flat and naked appearance of the provinces of Babylon; but frequently regretted each rising hill and scattered forest which she had formerly delighted in, with all the charms they had presented to her youthful imagination. The king, to gratify his consort, within the precincts of the city raised terraces and planted woods, in imitation of those that diversified the face of his queen's native country. Thus we are told originated those gardens, which for their singularity and comparative extent, were considered one of the wonders of the world. Their base covered four acres of land, and the height of them was so considerable that they resembled a pyramidal mountain covered by a forest. The upper area, which was about 30 feet square, was about 300 feet distant from the river Euphrates, that washed the base of that stupendous superstructure.

This towering pleasure-garden overlooked the whole city and surrounding country, as far as the eye could reach. Each terrace was covered with earth and planted with trees, so as to form a series of ascending groves: and every platform supported rural seats, fountains, and sumptuous banqueting rooms, on which all the splendour and luxury of eastern magnificence were lavished. And, at the present day, we are, in our own favoured land, attempting to exceed even those ancient gardens by the contents of our Crystal Palace-gardens, and those belonging to royal palaces, as well as some of the establishments belonging to the nobles of our isle. And whilst the public are allowed the privilege to enjoy such extended scenes of beauty, we all may, in a more limited degree, enjoy the pleasures of our own little garden, or window collection of flowers.

MISCELLANEOUS SECTION.

THE FALL OF THE LEAF.—(*Continued from page 64.*)—The beautiful tints of autumnal foliage are not correctly attributed to the action of frost. Neither are they the effect of the maturity, but rather of the old age of the leaf; and they may often be observed as early as August in those trees which are in a declining state of health. While passing by the Salem common during the second week in August, I observed a maple in its full autumnal drapery of crimson. On examining it, I found that the tree had been nearly girdled. The wound had been healed, and left only a narrow strip of bark, about three inches in width to sustain the whole plant. This might have been sufficient for that purpose, during a moist summer: but on account of the drought of the preceding July, it failed to supply the tree with sustenance, and a premature old age of the leaf and its accompanying tints were the consequence. A severe frost at that early date would have produced no such effect. An early frost always injures these tints by searing and embrowning the leaves which are exposed to it. This effect was noticed last autumn (1853) when the leaves that ripened later than usual, on account of long-continued rains in the latter part of summer, were overtaken by two very severe frosts, before they had begun to be tinted. In October, the effects of these frosts were apparent in a brownish tinge on the outer surface of the trees, greatly impairing the lustre of their tints, which were not so brilliant as usual.

The cause of the *superior beauty* of our autumnal hues, compared with those of Europe, is undoubtedly the greater intensity of the sun's rays and the greater proportion of clear and dry weather in America, causing the leaves to arrive sooner to maturity and old age. As these influences do not act in the same way upon European trees when introduced into this country, it would be important to note whether American trees preserve their peculiar habit when transplanted to European soils. There is reason to believe that, while these tints are attributable to the influence of our hot summers and clear skies, the habit was acquired with the origin of the species countless ages back, like the black skin of the negro, and that it is now beyond any such climatal influence. Though it might have owed its origin to this peculiarity of our climate,

the habit is now one of the characteristics of the species. In all cases the leaf becomes tinted only when it has lost a certain portion of its vitality, and just before it is ready to fall from the tree.

The pines are not classed with deciduous trees: yet they shed their leaves in autumn as regularly as the latter. Late in October you may observe the yellow foliage which is ready to fall, surrounding the last year's growth of the branches, and exhibiting a curious intermixture of yellow with the green growth of the last summer. These leaves always turn yellow before they fall: you never find the green leaves of a pine tree, as you do of many other trees, mixed with the other foliage upon the ground. The same fact may be noticed of the oaks.

As late as the second week in November we can seldom find one of our indigenous trees with any green leaves upon it, unless it be a young tree, under the protection of woods. The third period has now commenced, and the fall of the leaf is nearly completed. The oaks, though not entirely stripped of their leafy honours, have lost the beauty of their hues, and bear their heads less proudly among the leafless tenants of the forest. The grass already exhibits a seared and brown appearance, and is becoming tasteless to the flocks. A few asters may still be seen, a golden rod in damp places, an occasional solitary coreopsis in the meadows, or a blue-fringed gentian standing erect among the brown herbage of the fields. But amid the general desolate appearance of nature, the scarlet berries of the *PRINOS GLABER* are conspicuous among the wild shrubbery; and the wych-hazel, clad in a full drapery of yellow blossoms, stands ready with joyful hues to welcome the Indian summer.

The Indian summer, which arrives during this third autumnal period, if it comes at all, is a brief period of warm weather that sometimes greets our climate in November, after the fall of the leaf, and not, as many suppose, in October. It is probably caused by the sudden check given to vegetable perspiration by the fall of the leaves. It is well known that by sprinkling a floor, to cool a room in hot weather, we cause the heat to be carried off with the evaporation of the water. On the same principle the infinite host of trees, whose leaves are constantly evaporating the moisture of the earth, must proportionally cool its surface, and the atmosphere that is in contact with it. Anything that increases evaporation from the earth's surface must cool it in the same manner. Hence we may explain the greater coldness of the air over valleys and wet places on summer evenings; and the fact, often noticed, that a rainy spell in autumn is commonly succeeded by severe frosts. The greater burden of the foliage of our woods remains on the trees and shrubs until the severe frosts in the latter part of October. About this time the whole extent of our forests is often laid bare in the brief space of a week or ten days. Not only does this great extent of surface, thus laid open to the sun, receive from his rays an increased amount of heat, but there is a vast and sudden diminution, at the same time, of that evaporation which is caused by the leaves of plants. These two circumstances unite in producing, when no outward agencies interfere, a great accumulation of heat. The warm spell that follows is the true Indian summer, and may last from five to eight days.

During one of these spells of fine weather, I have sometimes heard the crickets chirping merrily as late as the eighteenth of November.

CONTRASTS IN LANDSCAPE GARDENING, &c.—Contrasts are used in the arts of ornamental gardening, painting, oratory, and poetry, for the purposes of heightening effect. The effects of contrast in landscape scenery have not been passed over in silence by the pastoral poets. Thomson, indeed, describes the monotonous and unvarying scenery of those parts of England where hedgerows prevail in favourable terms; and Dyer, in his view from Groggar Hill, seems to have admired scenery of a similar kind, when he says :

“ How close and small the hedges lie !
What streaks of meadows cross the eye ! ”

But in another part of the same poem it is rendered evident that he was alive to the charms of contrast, for he says :

“ The gloomy pine, the poplar blue,
The yellow beech, the sable yew,
The slender fir that taper grows,
The sturdy oak with broad-spread boughs,
And beyond the purple grove,
Haunt of Phyllis, queen of love,
Gaudy as the op’ning dawn,
Lies a long and level lawn.”

There are here the materials of a beautiful landscape, arranged in an effective manner—more effective than if the trees had been placed in hedgerows at equal distances over the face of the country, with narrow “streaks” of meadow ground filling up the intermediate space, and no striking feature, no expanse either of light or shade, to form a leading and concentrating object. A recent French writer compares the monotony—the want of variety—caused by hedgerows dividing field from field, to the English character, about which he considers there is also something monotonous and unvaried. Whatever degree of aptness there may be in the comparison, it is certain that no landscape painter would hesitate long if asked which of the kinds of scenery he would prefer.

In park scenery, the dotting system, by which trees are scattered here and there over the lawn, is prejudicial to effect: and the ornamental gardener, who knows the value of contrasts, will provide unbroken expanses of grass in some places, to set off the scattered groups of trees in others, while both the grass and the scattered groups will add to the effect of an adjoining dense forest-like mixture of trees and shrubs. Ornamental planters are now generally aware of the fine effect that may be produced by planting certain kinds of trees in masses, instead of mixing them in a manner which becomes monotonous through excess of variety, and which meets with no countenance in natural forests, since in them trees grow in masses of one kind, from the adaptation of the different kinds of trees to different soils and climates. In the flower-garden on gravel, contrast, in as far as the design of the beds is concerned, is produced by placing large and small alternately or in groups. In the flower-garden on grass, the same effect is aimed at by clustering the beds near the walks, and leaving a

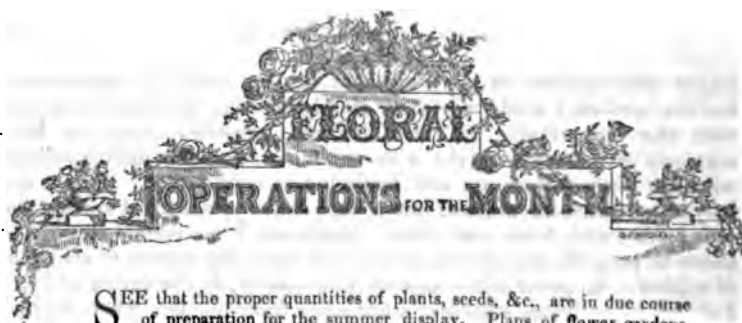
breadth of grass unbroken by a single bed, or even by a solitary standard rose. In planting the flower-garden, contrast is produced in two main ways, the one botanical and the other dependent on the effect of colour. The first consists in planting shrubs and flowers in separate beds, and thus keeping ligneous plants entirely distinct from those of a herbaceous nature. The second way has been fashionable for some years. On its first introduction, the lovers of the promiscuous mode of planting defended that mode on the ground that the beauties of a flower should be judged of by inspecting that flower individually, and not in relation to others. Such objections, however, were soon overcome, and the plan of planting beds with flowers of one kind, and of thus producing contrast by separate masses of colour, so arranged as that two adjacent colours should be entirely distinct in their nature, soon found many advocates and practisers. Perhaps, however, its recent wide prevalence may have been partly the result of a desire on the part of flower cultivators to be "fashionable;" and if this has been the case, the system must be regarded, to a certain extent, as lacking in permanence, for experience testifies that there is no stability in the laws of fashion. It is of importance, therefore, that there should be a searching after first principles in this as in other matters. A labyrinthine maze of beauty may be formed by an indiscriminate mixture of flowers and shrubs, beds, gravel, and grass; but no high degree of art would be exhibited in such a scene. A flower-garden in the massing system is highly artistical, while at the same time it receives countenance from nature; for who has not admired the effect of a bank of cowslips, a mountain side covered with heather, a grassy glade enlivened by a group of the early orchis, a brae side yellow with the blossoms of the broom, or an expanse of moorland adorned by the whin? Everywhere around us the beauties of Nature are heightened by contrast; and it would therefore be an insufficient reason for giving up the system of planting flowers in masses because it had become unfashionable. There will be no permanency in the art of ornamental gardening while fashion is allowed to hold sway within the bounds of the garden or park.—*North British Journal of Horticulture.*

VINE MILDEW; ITS PREVENTION AND CURE.—Again and again has sulphur been recommended for destroying mildew on Vines, and I believe there are no two opinions with respect to its efficacy when properly applied and in time; notwithstanding this, however, I have this season witnessed a splendid crop of Grapes entirely destroyed by mildew, almost to a bunch. I therefore naturally asked why sulphur had not been applied; and the answer was that every bunch had been dusted over and over again with it, as well as syringed with sulphur-water, but without the slightest benefit. It had not, however, been applied in time, nor in the proper way; for although dusting over the berries immediately the disease is perceived would certainly stop its progress, yet, used in this way, it must be admitted to have a very slovenly appearance, as well as more or less to taste the Grapes. Now, as sulphur will destroy the mildew after it has attacked the Vine, why not apply it as a preventive, which surely at all times is better than a cure? I would not recommend dusting the bunches or syringing the

leaves with sulphur, or anything that has an unsightly appearance; but the method I would advise is simply the one practised by myself with the best results, viz., washing my hot-water pipes or flues regularly over every fortnight with sulphur during the forcing season, when the pipes or flues are sufficiently hot to evaporate it. This is not only a preventive of mildew, but a sure check to our great enemy, the red spider; and, from some years' experience, I am certain that if the above be properly attended to, no one will have any reason to complain of mildew. In proof of the success of the above, in the spring of 1852 I visited a gentleman's garden, a few miles from London, where he had lost his crop for two successive years; and he had every appearance of doing the same again. Sulphur had been applied to the bunches, but the mildew had spread over the foliage, and even the young wood was attacked. In course of conversation with the gentleman and his gardener, I told them that I thought it was yet possible to destroy it, provided they would clear the house of the plants. This was done, the fire was lighted, and the flue made hot; sulphur was then mixed up in a pail and applied to the flues by means of a brush. The application was repeated twice a day for three successive days, and by the fourth day the disease had altogether disappeared, the berries that had been very badly attacked were cut out, and the remainder ripened and did well, so that, by the aid of sulphur applied to flues sufficiently hot to evaporate it, a good crop was secured. I never remember seeing any houses of Grapes so badly affected with mildew as the one I have just mentioned. With respect to my own late Vineries, I have fires lighted occasionally, with a view to evaporate sulphur by way of prevention in the manner I have already mentioned.—*E. Bennett, Perdiswell Hall, near Worcester.*—(*Gardeners' Chronicle.*)

The same kind of attention to flowering plants in stoves or green-houses, liable to the attacks of red spider or mildew, will be equally successful, from which consideration we introduce an article on the Vine into our pages.—EDITOR.

COTONEASTERS.—I have the charge of a range of six plant-houses, which extend one hundred yards. In front there is a half-circle flower-garden, of the same length across its base, and which is inclosed by an excellent yew-hedge six feet high, backed with a shrubbery. A border, eight feet wide, being inside the hedge, and a six-foot wide gravel walk next. I have the border occupied with a row each of Hollyhocks and Dahlias, in front of which is one of Fuchsias, and the row nearest the walk is composed of suitable-sized showy annuals. Instead of a box edging, I have one of trained *Cotoneaster microphylla*, nine inches high and about five broad. Its neat evergreen foliage is pretty; its profusion of white flowers are showy, but its being clothed nearly all the year with its bright red berries is beyond description. I have six circular beds for tall plants among the other beds of the garden; these six have an edging of Cotoneasters, *microphylla*, *buxifolia*, and the scarlet-fruited. Nothing can be neater or more handsome. I had two strong wires tied (with wire) to upright thick pieces of wire-rod (but wood will do), to which the plants are trained. Cotoneasters, too, are handsome as standards, or trained up as pillar roses are. Some fine specimens ornament our shrubbery-beds and borders.—(*A Nobleman's Gardener.*)



SEE that the proper quantities of plants, seeds, &c., are in due course of preparation for the summer display. Plans of flower-gardens, &c., should be sketched on paper, and the appropriate regulations for future arrangement and plans required be put down; this attention is of much assistance.

IN THE FLOWER GARDEN.

Last month was the best time for grafting shrubs, as Thorns, Limes, &c., but late-growing kinds may still be done, as Rhododendrons, &c.

ANNUALS, hardy—such as *Clarkia*, *Nemophila*, *Larkspur*, &c., may still be sown in the open bed. Seeds of *Biennials*, too, should now be sown in beds—such as *Hollyhocks*, *Sweet Williams*, *Scabious*, *Canterbury Bells*, &c. Also seeds of *Perennials*, as *Phloxes*, *Campanulas*, &c. Finish planting out *Biennials* and *Perennials*, and dividing large patches of border plants. *Hollyhocks* must be put in immediately; water them as soon as planted. Newly-budded trees, that is those budded last season, should be looked over, and if any portion of the stock be pushing shoots, they must be rubbed off, so that the entire strength should go to the new shoot engrafted.

AURICULAS AND POLYANTHUSES.—Give air freely on all suitable occasions, to prevent the flower-stems being drawn up weakly. The blossoms will soon be opening; no water must be allowed to fall upon them, and they must be shaded from hot sun.

PINKS.—If beds of them are required, make them immediately. A loamy soil, made of turfs a few inches thick, and well rotted, with an equal portion of old decayed cow-dung, is admirably adapted for their growth. It should be nine inches deep, and have a good drainage below. The plants must be removed with as much of the ball of soil as possible, and be planted six inches apart. High raised beds are not beneficial, except in low, wet situations. Autumn planted beds should be top-dressed with a little rich soil, and the plants be made firm in their places; a few small sticks stuck around amongst the shoots will prevent twisting off.

RANUNCULUSES AND ANEMONES.—When the plants are risen an inch or two high, have the soil pressed closely around them with the hands, stopping up any holes made by worms, &c. A top-dressing, too, of rich compost, free from wire-worm, is very beneficial. Often stir up the soil between the rows. Showers of rain are very beneficial for their growth; if none fall, water with soft water in the morning; well-water is injurious. Weak manure-water occasionally poured between the plants contributes to vigour.

TULIPS.—Stir the surface of the bed an inch deep. Protect from hail, frost, and strong wind. Keep the soil firm around the stem, and mind that water does not lodge in the heart of the plant, where the infant flower is, or it will be damaged; gently open the leaves to admit the water to drain off.

HYACINTHS should be protected from frost, sun, and wind; secure by tying to proper supports. Stir up the surface soil.

PANSIES in beds must have the soil pressed around the plants, and a top-dressing of rich soil an inch or two thick will be beneficial. New beds of them should also be planted. A few sticks among the shoots prevent them being twisted.

CHRYSANTHEMUMS.—Strike cuttings, or pot off rooted suckers.

ROSES.—Now plant out the tender China and Tea, or Bourbons, &c.

IN THE FORCING FRAME.

Balsams, *Cockscombs*, *Globe Amaranthus*, &c., that require potting off, or repotting, should be duly attended to; also *Thunbergias*, *Browallias*, *Lobelias*, *Brachycomas*, &c. Seedling *Fuchsias*, *Verbenas*, *Petunias*, &c., should be potted off singly. *Dahlias*, too, should be placed so as not to be drawn up weakly. *Achimenes* must be potted off singly. (See articles on Culture in previous Numbers.) Tender *Annuals*, as *Stocks*, *Zinnias*, &c.,

should be placed in a cool frame or pit, to prevent them being drawn up weakly. Where it is practicable to pick out, such as Stocks, Asters, &c., upon beds, and protect with frames, it should be done; it gives a robust growth to them. Cuttings of most greenhouse plants may now be put out. Young plants of Fuchsias, now procured, if six inches high, will make fine ones for shows in summer. Repot Achimenes, Gloxinias, &c.

IN THE GREENHOUSE.

Admit all the air possible. Repot Lobelias, Tigridias, Geraniums, Verbenas, and other similar plants for beds. All other kinds of plants requiring repotting should now be done. Such as are straggling, &c., should be cut in, to render them bushy. *Pelargoniums* will require particular attention in tying up, watering, and fumigating (if green fly be perceived); occasionally give a little manure water. (See articles on Culture in previous Volume.) Camellias, when done blooming, examine the roots, and, if necessary, repot (see articles upon, for soil, &c.); then place them in a warm part of the greenhouse or forcing-house, giving due attention to watering, &c., till the wood is firm and flower-buds are set; they may then be removed to a cool pit, so as to be gradually hardened by more air, &c. Japan Lilies flourish best in peat soil and sand, Cinerarias require particular attention: pot or repot young seedlings, and fumigate if green fly appear.

A careful inspection of the greenhouse plants should be made, to see which require repotting, and do it at once, not waiting till some general performance. Such Azaleas as have done blooming must directly be repotted, and their growth afresh be gently promoted in a higher temperature for a short time.

ERICAS.—Any requiring repotting should be done directly; avoid too large pots with the less vigorous growers, but free growers will require room to extend in proportion. Give air freely, but avoid draughts, especially from east and north. Calceolarias require repotting to have a vigorous bloom.

BRIEF REMARKS.

COLLODION.—In your last month's Magazine you mention the application of Collodion in stopping the bleeding of Vines. I beg to state that I have used it most effectually for that purpose, on our late pruned Vines here since 1882, and I am at present trying what effect it will have in curing the canker of fruit trees. My attention was called to it by Dr. Dalziel, of Penpont, who has used it for years before the date just mentioned, when pruning his fruit trees. Dr. Dalziel prunes his wall trees at any time that is most convenient, and immediately applies collodion to the wounds. His trees are in good health, and annually bear fine crops of fruit. He was also among the first (if not the first) in this part of the country, who employed collodion in his own profession.—JAMES M'INTOSH, Drumlanrig Gardens.

(By mistake, we stated the process in reference to striking cuttings being tried by Mr. Low, of Clapton, it should have been E. J. Lowe, Esq., of Nottingham.—EDITOR.)

HOITZIA COCCINEA.—I regret that I cannot give you a correct statement respecting the management of the *Hoitzia*, from which I sent you a specimen, as I have only been in my present situation about six weeks. Six plants of it were growing in the stove here when I came—three of them were old ones which had been cut back; the best had at least thirty spikes of bloom on it, all quite as good as the one sent. The plants were at least three and a half feet high; they had been grown in 8-inch pots, in a mixture of loam, peat charcoal, and red-pit sand. The plant from which the flowering specimen sent was cut had only three spikes on it; it had been grown in a 8-inch pot, and was about eighteen inches high. I think, from the habit of the plant, that it might be very much improved by being stopped once or twice in the early part of its growth, which had not been done in this case. They are now all cut down, and are breaking at almost every eye. J. A. F.—*Gardener's Chronicle*.

(It is a very pretty and ornamental flowering plant—merits a place in every stove.—EDITOR.)

FUCHSIA SERRATIFOLIA, and the varieties *Floribunda* and *Alba*, are very valuable winter blooming plants, being highly ornamental for the greenhouse or sitting-room from October to the end of March. When the plants have done blooming, cut back the shoots,

shorten them, and insert the cuttings in sand, place in bottom pot. They soon strike root, pot off into a rich loam well drained, and encourage their quick growth. In July turn the plants out of pots into a warm situated border, soil being tolerably dry, by the middle of October the young flower will be visible, then take them up entire, and repot into a rich compost well drained, placing them in a close frame or pit for a week or two, then remove them to bloom in the green-house or sitting-room, and they will be highly ornamental from the beginning of November to March. When these have done blooming, cut in as before stated, and turn the plants into the open ground, repotting them in October. These old plants bloom more profusely than the young ones. Every attention is most amply repaid.

JASMINUM NUDIFLORUM (Lucy).—This very beautiful yellow-flowered plant is a most valuable acquisition; it blooms in the open garden through autumn and winter, grown in a warm sheltered situation. It does well, too, trained to a wall or trellis. It is valuable also for in-door ornament through the above-named seasons, either in greenhouses, sitting-rooms, &c. It blooms in profusion, and makes a charming bush. It is sold at a shilling each.

EXTERMINATING ANTS.—I have a grass lawn in front of my house, the soil is a sandy loam upon a gravelly substratum. For the last four years the Ants have formed themselves into colonies, and in spite of all my exertions to exterminate them they not only abound, but are numerously increasing. What course can I pursue to get rid of these enemies, without destroying the grass? An early reply will oblige a country Clergyman.

(Give it a good soaking with *diluted gas-tar*. The liquid must be tried in a weak state first, if that does not effect the object, give a stronger solution. It will not injure the grass, unless the gas-tar was in its *almost* pure character. The Ants will soon quit the ground. If they have formed themselves into large companies, take off the turf at the place, loosen the top of the soil and pour a soaking of *strong gas-water*, and in a fortnight relay the turf.—EDITOR.)

SMICOGRAPHUS GHIESBREGHTIANA.—Early last spring I procured a rare bushy plant, and it grew vigorously till the beginning of June. I then stopped all the leads, repotted the plant, and it produced a number of lateral shoots. I retained all, and kept the plants in the greenhouse (a light one) till the end of September, I then put it into the *stove* and by the close of November it began to bloom, and at Christmas the plant had fifty-eight fine spikes of brilliant scarlet (*Justicia* like) tube-shaped flowers. It has continued in great beauty up till now, in my *warm greenhouse* (March 15th). It is one of the most gay and useful winter blooming plants we have in this country. By arrangement in potting, stopping shoots, &c., at sundry times, I am informed plants in bloom may be secured all the year. It is a very free growing plant, makes a good sized bushy one by attention to stopping. I grow it vigorously in equal parts of good loam, turfy sandy peat, and very old decayed dung, with a liberal sprinkling of white sand. During its time of growth and blooming it requires a good supply of soft water, and occasionally manure water. After blooming, I am told, it requires a few weeks rest, and only water enough to keep the soil barely moist, then cut back, repot, and encourage its growth, also at the proper time introduce it to the warmest part of the greenhouse, or into a stove, and it soon becomes one of the gayest ornaments. It is now a good time to obtain a plant for next autumn and winter's bloom.—CLERICUS.

CULTIVATION OF THE AMARYLLIS FAMILY.—*Amaryllis Belladonna*; *A. advena*; *A. pratenais*; *A. crispata*; and *A. curvifolia*, will flourish in the open ground, or in pits or frames, or sheltered by hand-glasses, and in intense frost covered by mats, but when frost is over uncover altogether. *Amaryllis atamasco* is the hardiest of all. The following require a temperate greenhouse: *Amaryllis* (or *Hepeastrum*) *acuminata*, *aulica*, *calyptrata*, *equestris*, *fulgida*, *pauciflora*, *reticulata*, *ratilla*, *solandraeflora*, &c. These are species from the *torrid zone*, and require the following treatment, which is equally applicable to their numerous cross-bred varieties:

The bulbs must, during the time of rest, that is, during the three or four last months of the year, be kept very dry. They may be kept in the pots on a dry shelf in the stove. In January they are placed near the light, and where they may be free from drip. By and by, their scapes and leaves will commence to grow, when they must be slightly watered, gradually increasing the quantity. They will flower and ripen seed under this treatment, especially if the process of artificial fecundation has been carefully attended to, whether by means of their own pollen, or with that of some other species or variety. Success in the

maturation of the seed depends on the following precautions:—Avoid changing the pot from its place; maintain the temperature at from 10° to 12° Reaumur [55° to 60° Fahrenheit], at the least, and never allow it to get below 8° Reaumur [50° Fahrenheit]; water moderately and always when necessary. The production of the seed never affects the health of the bulb, if these directions are carefully followed.

As for the plants which have not flowered, and those whose flowers have not borne fruit, it is advisable to place them in the month of May in a close frame, the lights of which should be opened by the middle of June, if at that time they may be watered by genial showers. The lights must then be kept off, except in the case of cold or rain. This treatment is only applicable to the healthy bulbs, and not to those that are weak or unpromising. These last must be preserved under glass all the summer, and shaded towards the middle of the day. Unhealthy plants are liable to be attacked by the coccus; and in order to free them from these insects which lodge between the scales, the bulb should be brushed with a soft brush, having a pointed handle, which may be used between the scales, as occasion may require, by which means the insects are dislodged. This operation repeated from time to time, is the best and safest mode of keeping the bulbs clear of the insects.

It is advisable to arrange the bulbs according to their state of advancement. Those which have attained the same uniform growth require the same treatment. On one side are placed those which are weak and not disposed to grow; on another those which are growing slowly, and must be excited; and so on. The most favourable time to repot the plants is when they attain to their strongest growth. This operation must be performed with the following precautions:—Take care not to break the ball, but take off about two inches of the surface soil, carefully clear and adjust the principal roots, and place a layer of new soil in the bottom of the pot. This soil should be composed of equal portions of loam and leaf mould, well mixed together; then place the bulb on the top, filling up the sides carefully with more soil, and press the whole gently down. A copious application of water should then be given to consolidate the soil and refresh the bulbs. After a slight syringing, place the plants in a frame which must be kept quite close for a few days, until a gentle shower falls, when the lights may be raised.

All the healthy plants must be treated in this way until the middle of August, when, if the weather is cold and cloudy, the lights must be kept on, and neither water nor shade applied to the plants. By this treatment they will rapidly attain maturation, and the leaves will become dry. At the latter stage the bulbs should be removed from the frames, and placed in the pots on the shelves of the stove.

Amaryllis vittata thrives better in a lower temperature.—(L. VAN HOUTTE.)

PENDENT OR WEEPING TREES.—In all kinds of scenery connected with the garden or field, few objects are more pleasing and striking than handsome weeping trees. Whether their branches are seen to kiss the lake or murmuring brook, or droop in mourning mien over the lonely tomb, their gracefulness and beauty are readily felt and acknowledged. In the extended landscape of mountain, stream, and plain, or even on the lawn of more circumscribed limits, the general effect of weeping trees, when tastefully distributed, is highly picturesque and ornamental. Much skill and taste may be expended in arranging and grouping trees of upright habit, but no other objects so effectually impart an air of completeness or *finis* as the gracefully pendent boughs of the weeping varieties, such as the Willow, the Ash, the Elm, and the Birch.

But beautiful and desirable as weeping trees undoubtedly are, no experiment to increase the number of varieties has as yet been successful. The vulgar notion that the grafts of upright growing kinds assume the pendent habit by merely being inserted in a downward position has long been favourably entertained among the inexperienced in horticultural affairs. But such a notion is, of course, founded in extreme error, since nothing can be more at variance with all known facts bearing on vegetable physiology, as well as skilful practice. The fact is, in this matter, the horticulturist has no resource. Among the innumerable expedients incidental to his profession, no one he can employ, no scheme he can devise, has yet enabled him to surmount this difficulty. Amidst the profundity of learning and the assiduity of research, it must still be admitted, that the origin or production of weeping trees is regulated and determined entirely by the ordinary laws of chance. To the physiologist nothing is more inexplicable; and, perhaps, nothing among the "vital phenomena" of vegetation has been less studied.

And yet, notwithstanding the odds against which we have to contend, it is gratifying to find that the number of varieties of weeping trees has been considerably increased within the last few years, and that the character of those which have been introduced to cultiva-

tion is of no trivial description. Were the different varieties now known to be compared with each other, it would, perhaps, be found, that the Ash, the Elm, and the Willow had suffered no depreciation by the introduction of others which have been later raised. But, indeed, a weeping tree is so graceful and beautiful, that it must, when well grown, command admiration, whatever may be the genus to which it owes its parentage.

It would be interesting and instructive to investigate the degrees of that perpendicular tendency which constitutes a perfect weeping tree. It is scarcely to be denied that there is a wide distinction between those whose strong shoots turn towards the ground as soon as they are a few inches in length, and such as assume the weeping form simply by the branches being gradually bent down by their own weight at the extremities. Of the former, the Oak, the Holly, the Ash, and the Elm, may be cited as examples, while the Willow, the Birch, and one or two others, represent the latter. Not that I think that the Willow is less a weeping tree than the Oak; but in the one case the greater tenuity and length of the branches are more likely to be favourable to the drooping form than their robust strength in the other. The general effect is the same; the cause or process by which it takes place appears to be different. In support of this view it may be observed, that there are many trees not classed among those having a weeping habit, which, owing to the tenuity and length of their branches, are capable of being easily trained to assume as pendulous a form as the weeping varieties of the Oak, the Elm, or the Willow. I have seen a tree of the common Thorn (*Crataegus Oxyacantha*), which, having been trained on a single stem seven or eight feet high, and the upper shoots kept short, finally assumed the true weeping form, or, at least, a very close approximation to it. Other varieties of the same beautiful genus—such as *C. Oxyacantha laciniata*, *criocarpa*, *melanocarpa*, *Azarella*, and *salicifolia*, have all, more or less, a branching, spreading, or sub-pendent habit; and, in many cases, we find their shoots take a positively perpendicular direction. It may be observed, that even shoots of the Funeral Cypress only begin to turn downwards after they have attained a certain length, as if requiring the force of gravitation to give the appearance so much admired. Now, in the case of the Weeping Holly, there is a positive downward tendency of the shoots, as soon as they are a few inches long; while, contrary to the tenuity we find in those of the Willow and Cypress, they are vigorous and thick enough to grow erect for several feet if it were conformable to their habit.

From this view of the subject I am led to infer that some trees assume the weeping form in a great measure, if not entirely, by the weight of their branches, which are too soft and slender to grow upright, while others, from some unknown cause or action of the sap, naturally incline downwards, even though vigorous and strong. I should be glad of the opinion of others on this subject. P. F. KELR, (*Companion to the Flower Garden*.)

CULTURE OF JAPAN LILIES IN BEDS IN THE OPEN GROUND.—The best time for planting is the latter end of February, or very early in March; but it must be before the bulbs show any signs of growth, so that the season will become in great measure a guide as to the best time for planting. After choosing the best situation for a bed of these lilies, dig out the soil of the intended bed two feet deep. In the bottom of the excavation, put a layer of about six inches in thickness of broken brick rubbish, or any other porous material near at hand; if the situation is damp, increase the quantity to nine or twelve inches; but if dry, use less. This done, go to the compost-yard, and mix up the following ingredients:—Peat soil—that which you find with plenty of fern-root in it is the best, as Lilliums are particularly partial to such soil—two-thirds; good fibrous loam, one-sixth; and leaf-soil, one-sixth. Chop the peat and loam up very roughly, using the roughest portion for the bottom, and the finer for the top of the bed. When it is filled up to within three inches of the top, arrange the bulbs over the bed in the following manner:—Place all the strongest bulbs of *L. l. speciosum*, and *L. l. punctatum*, to form a centre row (supposing the bed to be an elongated one), as they grow the tallest. If the bulbs should have two buds or eyes, place them so that the two stems produced will range in the order of the rows, and not crosswise on the bed; they should be about a foot asunder. If there are any bulbs strong and single-eyed, place them in the centre of the middle row; or if a roundish bed, they should form a central group, as they usually grow taller still. The rows of plants should be nine inches asunder. Next select the strongest single-eyed bulbs of *L. l. album*, and place a row of these on each side of the middle row. If you have a sufficient quantity of flowering bulbs of the two first-named sorts, make a second line of them outside the white, mixing them as you place them; these two varieties grow to about the same height, and the bulbs placed in this third row not being so strong as those placed in the centre, will not grow so tall. On the outside place another line of the second-size flowering bulbs of *L. l. album*, which will then form the edging. It is

important to bear in mind that the very strongest bulbs of *allium* must be planted in the second row (the first from the centre), or the other varieties in the next row outwards would grow above them, and give the bed an awkward appearance. When the bulbs are thus ranged satisfactorily over the space put about half-a-pint of white sand about each bulb; this tends to keep them healthy, and makes clearer and sounder bulbs for the next year. Then fill up with about three inches of the finer parts of the soil, not pressing it down. By the end of April, if the season has been favourable, you will find whorls of roots near the surface of the soil. When this is found to be the case, they will require surface dressing with fine soil of the same kind as that used in forming the bed; a layer of three to four inches in thickness at this period will assist them greatly. To allow of this addition to the soil, it will be almost necessary to have some neat kind of edging-boards, similar to those used for tulip beds. As the plants advance in growth, let them be tied up carefully.—*AMICUS*.

HIMALAYAN JOURNALS, BY DR. J. D. HOOKER.—"The top of Sinchul is a favourite excursion from Dorjiling, being very easy of access, and the path abounding in rare and beautiful plants, and passing through magnificent forests of Oak, Magnolia, and Rhododendron: while the summit, besides embracing this splendid view of the snowy range over the Dorjiling spur in the foreground, commands also the plains of India, with the courses of the Teesta, Mahanuddee, Balaun, and Meehi rivers. In the months of April and May, when the Magnolias and Rhododendrons are in blossom, the gorgeous vegetation is, in some respects, not to be surpassed by anything in the tropics; but the effect is much marred by the prevailing gloom of the weather. The white-flowered Magnolia (*M. excelsa*, Wall) forms a predominant tree at 7,000 to 8,000 feet; and in 1848 it blossomed so profusely that the forests on the broad flanks of Sinchul, and other mountains of that elevation, appeared as if sprinkled with snow. The purple-flowered kind, again (*M. Campbelli*), hardly occurs below 8,000 feet, and forms an immense but very ugly, black-barked, sparingly-branched tree, leafless in winter, and also during the flowering season, when it puts forth from the ends of its branches great rose-purple cup-shaped flowers, whose fleshy petals strew the ground. On its branches, and on those of Oaks and Laurels, Rhododendron Dalhousiae grows epiphytically, a slender shrub, bearing from three to six white lemon-scented bells, $4\frac{1}{2}$ inches long and as many broad, at the end of each branch. In the same woods the scarlet Rhododendron (*R. arboreum*), is very scarce, and is outvied by the great *R. argenteum*, which grows as a tree, 40 feet high, with magnificent leaves, 12 to 15 inches long, deep green, wrinkled above and silvery below, while the flowers are as large as those of *R. Dalhousiae*, and grow more in a cluster. I know nothing of the kind that exceeds in beauty the flowering branch of *R. argenteum*, with its wide-spreading foliage and glorious mass of flowers. Oaks, Laurels, Maples, Birch, Chestnut, Hydrangea, a species of Fig (which is found on the very summit), and three Chinese and Japanese genera, are the principal features of the forest; the common bushes being Aucuba, Skimmia, and the curious Helwingia, which bears little clusters of flowers on the centre of the leaf, like Butcher's-broom. In spring, immense broad-leaved Arums spring up, with green or purple-striped hoods, that end in tail-like threads, 18 inches long, which lie along the ground; and there are various kinds of Convallaria, Paris Begonia, and other beautiful flowering herbs."

FUCHSIA SERRATIFOLIA.—This greatly merits a place in the most select collection of greenhouse plants, on account of its habit of blooming at mid-winter. Like many other valuable plants, I believe it has been nearly thrown out of cultivation, in consequence of our ignorance as to its true merits. If grown as a summer plant, like the others of its genus, it would be completely useless, producing nothing but a naked stem, with a few leaves at the top; as to flowers, they would be few and far between; but when grown as a winter-blooming plant, it will well repay a little extra trouble, and meet with many admirers on account of its beautiful foliage and magnificent flowers. The way I manage it, is to grow a plant well, and then starve it into blooming. In April I take cuttings, which soon strike in a slight hotbed, and when struck, they are potted into half-pint pots, and returned to the frame, where they continue till they are fairly established, when they are removed to a cold frame, where they remain during the summer, being repotted and encouraged to grow well until they get into eight-inch pots, in which they are to bloom. When the pots begin to be well filled with roots, they will begin to show bloom, and will be in perfection during November and December. This plant is of so easy management, that the amateur possessed of a small greenhouse may cultivate it without any difficulty.—*Midland Florist*.

NO PLACE LIKE HOME.—"Pick out," writes Mr. Wallace, the naturalist, who has just spent four years in collecting specimens on the banks of the Amazon—"Pick out the loveliest spots where the most gorgeous flowers of the tropics expand their glowing petals,

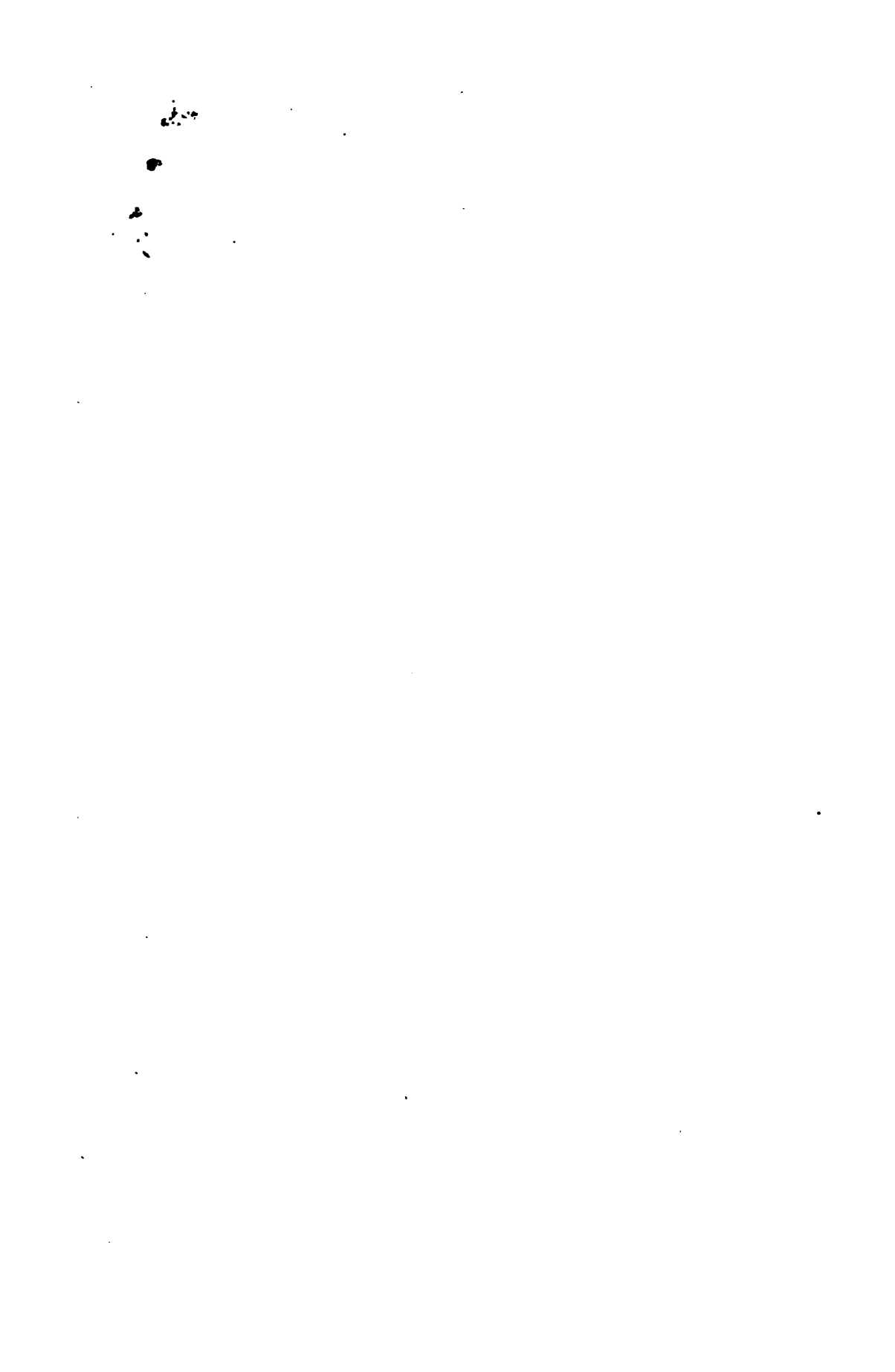
and for every scene of this kind we may find another at home of equal beauty, and with an equal amount of brilliant colour. Look at a field of buttercups and daisies—a hill side covered with gorse and broom—a mountain rich with purple heather—or, forest glade azure with a carpet of wild hyacinths, and they will bear comparison with any scene the tropics can produce. I have never seen anything more glorious than an old Crab tree in full blossom; and the Horse-chestnut, Lilac, and Laburnum will vie with the choicest tropical trees and shrubs."

HORTICULTURAL SOCIETY MEETING, REGENT-STREET, MARCH 7TH.—Messrs. Veitch exhibited the following plants:—*Boronia Drummondii*. It forms a neat bush, and blooms freely. The flowers are large, of a bright rosy-red. It is a charming plant for the greenhouse. *Acacia Drummondii*. Many of our readers know the handsome *A. grandis*, but the one now shown is much superior. The foliage is exceedingly neat, and dwarf plants, which are easily kept bushy, bloom very freely. The flowers are produced on cylinders, which are an inch or more long, of a beautiful rich yellow colour. It merits a place in every greenhouse. *Sarracenia purpurea*. The flower composed of two round compact heads, or little bundles of purplish-brown leaves, elevated on long slender stems that push up from among the singular pitcher-like appendages. It is stated that in its native country the pitchers are excellent fly-traps, the hairs in the inside pointing downwards, readily admit the flies to descend into it, but prevent the possibility of escaping out. Messrs. Henderson, of Pine-apple-place, sent *Franciscea confertiflora*, its large blue lilac blossoms are very ornamental; it is one of the best. *Conoclinium lanthema*. The plant was a yard high, and rather more across. It is a good winter blooming plant. The flowers are produced in terminal large heads, something in the way of the blue *Ageratum*. *Bilbergia iridiflora*. A Pine-apple looking plant. Its neat flowers, almost hidden amongst the brilliant scarlet bracts, are strikingly pretty. *Brachysema acuminata*. A pretty plant for colling round a wire frame; the flowers are of a rich crimson scarlet. *Acacia longifolia*. Its long, very narrow leaves, and the profusion of yellow blossoms render it a pretty plant. Its habit is to grow very tall, but it is readily kept low, and formed into a bush by stopping, in which form it blooms very freely. The following were sent from the garden of the Society:—*Epacris ardentissima*. Flowers a fine crimson red, tube an inch long. *Epacris lineata*. Light pink. *Berberis Darwinii*. A hardy bushy plant that blooms in vast profusion. It had been kept in a pit-frame. The plant does well in the greenhouse, and its mass of rich orange yellow blossoms render it exceedingly ornamental. It makes a fine winter and spring blooming plant for the greenhouse, or dwelling-room window. *Acacia lineata*. A neat plant with pine-like foliage an inch long. It is a profuse bloomer, and its numerous rich, bright yellow, globe-shaped blossoms, are very showy. The plant is readily formed to a neat bush, and ought to be in every greenhouse. *Pultenaea retusa*. A shrub with pea-like yellow flowers. *Dielytra spectabilis*. This very neat flowering plant has an interesting and handsome appearance, and is admired by all who see it.

There should be plants of it in every greenhouse and dwelling-room window. It is easy to grow, can be procured at a low price, and as readily propagated as the Dahlias are. One or more ought to be in every flower-garden, as it is perfectly hardy, only requires to have a bell or hand-glass over the crown of it during winter to guard it from excess of wet. We have seen out-door plants each four feet high, and as much across, in profuse bloom near London.

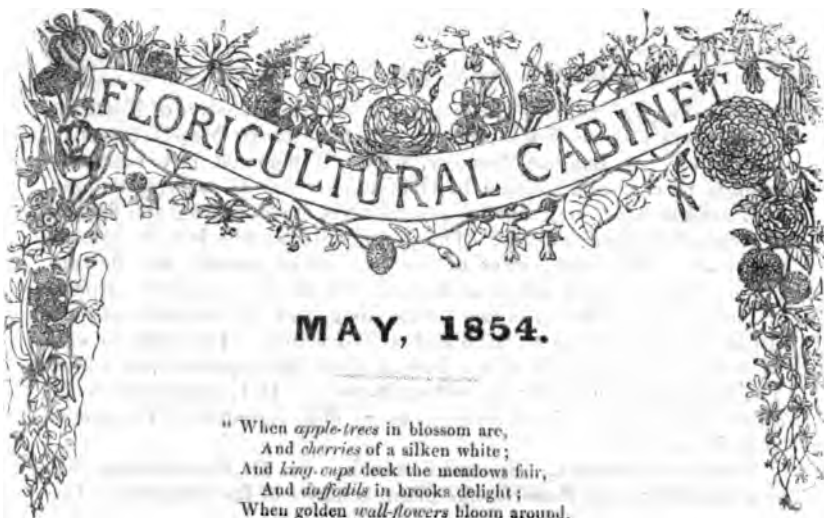
At the meeting on February 21st, the following were exhibited. From Mr. Atkins, of Painswick, near Gloucester, a number of most beautiful seedling *Cyclamens*. That gentleman has for many years been an ardent admirer and cultivator of this pretty, neat, flowering genus, and has been rewarded for his attempts to obtain improved varieties by the lovely ones which appeared on this occasion. One pot of one of his new kinds, named *C. Atkinsoni*, had 254 expanded flowers, of a French white with a rose dye. There had been many gone out of bloom, and others were springing forth. The appearance was a mass of bloom, about a foot across, and each flower standing erect, about five to six inches high, producing a most charming effect.

FANCY PELARGONIUMS.—This handsome class generally bloom early. The first week in April I select the forwardest and place them in gentle warmth; also give liquid manure every third watering, which brings out the blossoms boldly and freely; it also contributes to brighten the colours of the flowers, and they continue much longer in bloom than similar plants do which have not liquid manure. At this time, too, I cut off the ends of the shoots of a portion of the plants to prevent them blooming now, and to induce them to push fresh shoots, which, being later, will produce a fine bloom in Autumn, or even up to Christmas. Cuttings, too, now struck, potted, and duly treated afterwards, will form winter blooming stock.—*A Six Years' Manager of a Collection of above 10,000 plants of this class.—London.*





Conoclinium longifolium



MAY, 1854.

" When *apple-trees* in blossom are,
And *cherries* of a silken white;
And *ling-cups* deck the meadows fair,
And *daffodils* in brooks delight;
When golden *wall-flowers* bloom around,
And purple *violets* scent the ground,
And *tilac* 'gins to show her bloom,—
We then may say that May is come."

" God might have made enough, enough
For every want of ours;
For luxury, medicine, and toil,
And yet have made no flowers."

" Our outward life requires them not;
Then wherefore had they birth?
To minister delight to man,
To beautify the earth;

" To comfort man, to whisper hope
Whene'er his faith is dim;
For 'whoso careth for the flowers,
Will care much more for him.'"

ILLUSTRATIONS.

CERATOSTEMA LONGIFLORUM (Synonym, *C. grandiflorum*), N. O. *Vacciniæ*. Section *Ericaceæ*.

MR. LOBB discovered this very handsome flowering, evergreen shrub on the Andes Mountains of Peru, at an elevation of 12,000 feet. We saw it in bloom last summer, in the cool greenhouse at Messrs. Veitch's nursery, King's-road, Chelsea. It forms a neat bushy shrub (*now* two feet and a half high, and as much across), and blooms freely. It has been considered a half-hardy plant, but from its appearance, and in its native habitat, growing in such an elevated situation, it will very likely prove hardy in this country, at least as hardy as the *Mitraria coccinea*. It is a valuable acquisition, and merits a place in every floral collection of plants.

NOTES ON NEW OR RARE PLANTS.

GENTIANA FORTUNI.—This handsome species is a native of Northern China, from whence it was sent by Mr. Fortune to Messrs. Standish and Noble, of Bagshot Nursery, where it bloomed last year. It belongs to the same section of *Gentiana* as the *G. septemfida* and *G. Pneumonanthe*, viz., having several erect stems bearing the flowers in terminal glomerate heads. The present new species is more robust, and rises higher than either of the two above named; the flowers too are larger. Each principal stem bears from six to eight blossoms, and an individual flower is two inches long, and the five-divided limb (front of the flower) is an inch and a half across. The limb, as well as inside of the tube, is of an intense deep blue, spotted with white. The outside of the flower is yellowish-green. It is supposed to be quite hardy. It merits a place in every flower-garden. (Figured in *Bot. Mag.*, 4776.)

HEINTZIA TIGRINA. Spotted-flowered. N. O. Gesneriaceæ.—It is a coarsish robust *Besleria-like* plant, a native of the Caraccus. The leaves are large, similar to those of a *Gloxinia*. The stems rise from two to five feet high. The flowers proceed, singly, from the axils of the leaves, and are nearly erect, *funnel-shaped*; calyx large, of a pale yellow-green, tinged with red; corolla funnel-shaped, an inch and a half long, white, and the *limb* (front of blossom) is an inch across, divided into five lobes, white, beautifully spotted with purple. It bloomed last *winter*, in the stove in the Royal Gardens at Kew. (Figured in *Bot. Mag.*, 4774.)

PITCAIRNIA LONGIFOLIA, N. O. Bromeliaceæ.—This pretty flowering pine-apple like plant was sent by Mr. Nation from Lima, in Peru, to the Royal Gardens at Kew in 1852, and bloomed in the stove in 1853. The plant has a clear stem or trunk, nearly a foot long, and upon its summit the spreading tuft of long leathery leaves (sometimes four feet long) are produced. The flowers are borne in a *panicked raceme*, forty or more blossoms in each. The corolla, of three petals, forms an apparent tube, two inches long, of a bright-red colour. It is a very interesting and pretty flowering plant. (Figured in *Bot. Mag.*, 4775.)

PRUNUS SINENSIS, FLORE ALBO PLENO. This is a *valuable acquisition*, a PLUM having blossoms that are *double*, white, and each flower being from one to two inches across, having a long footstalk. It rivals the *Pyrus Japonica*, and in contrast produces a charming effect. Mr. Fortune discovered it in China in 1852, and transmitted it to England. It ought to be in every shrub border.

FUCHSIA SOUVENIR DE LA REINE.—Mr. Coene, of Gendbrugge, exhibited the plant at the *Florale de la Société d'Horticulture de Gand*, in 1853. The tube of the blossom is an inch long, of a bright rosy-purple, and the sepals are white and green. The corolla is of a similar colour to the tube. It blooms freely, and the blossoms have a strong likeness to those of *F. cordata*.

BEGONIA FUCHSIOIDES ALBA. It is a more vigorous plant than B.

fuchsioides, and the foliage of a lighter green. The blossoms of the latter do not open fully, but those of *B. f. alba* expand quite flat. They are too of good substance, pure white, with a very striking rich yellow centre, and each flower is an inch across. It is very neat and pretty, well meriting a place in every collection.

MEDINELLA MAGNIFICA. There is a most noble specimen of this superb, large, hot-house plant in bloom at the nursery of Mr. Veitch, King's-road, Chelsea. It has upwards of thirty of its large panicle racemes of singular-formed flowers, which have a very striking appearance. It will, most likely, be shown at the Horticultural Society's Exhibition in May.

RHODODENDRON JASMINIFLORUM. In the greenhouse at the above nursery, we saw a fine bush in bloom. The flowers are borne in somewhat drooping clusters of about twenty in each. They are of a pure waxy-white, the tube-formed blossoms two inches and a half long, with a spreading limb (end of blossom), half an inch across. It is very pretty.

DURANTA BAUHNERA. A bushy shrub, having foliage in form very like that of the *Altheas*; but the leaves are beautifully variegated with green and yellow. It is grown in the stove, and has an ornamental appearance.

GESNERIA DONKALENIA. A robust plant. The leaves are nearly heart-shaped, eight inches across, green, tinged with purple and red. The flowers are produced in terminal heads; and plants about nine inches high bloomed freely. Each blossom is about two inches long, in the form of one of the scarlet-blossomed *Pentstemon*; they are of a rosy-red colour, very neat and pretty.

APHELANDRA ROI LEOPOLD. A stove plant, having very large leaves, almost the size of *Canna indica*, a deep shining green with white veins, having a beautiful netted appearance. It also blooms freely, and the flowers, of a citron-yellow colour, are very pretty. It was originally discovered in the woods of Rio de Janeiro, and is offered for sale by Mr. Van Houtte. It is very ornamental even without flowers.

IMPATIENS JERDONIE. Mrs. Jerdon's Balsam. Mr. M'Ivor sent this interesting species from the East Indies to the Royal Gardens at Kew, where it bloomed in the greenhouse. We recently saw a plant of it in bloom in the stove in Mr. Veitch's, and in strong heat the colours are much finer than in the greenhouse. The stems of the plant are jointed, similar to those of *Cacalia ariculata*, and at intervals throw out roots. The stems rise from six to ten inches high, fleshy, tinged with purple. The leaves are only upon the upper part of the gouty stems, oval. The flowers are produced at the ends of the shoots, six to eight in each cluster. The flower-stalks are red, each bearing a single blossom. Sepals green; side ones bright yellow; the lower portion of the flower, usually termed the sack or pouch, is, in the stove, a bright red, and, in contrast with the yellow top, has a pretty appearance. It does not appear to be a profuse bloomer.

ÆSCHYNANTHUS MINIATUS. In the stove at Mr. Veitch's nursery,

King's-road, we saw this neat and pretty flowering species. The plant was erect, about a foot high, having several stems, and each terminating in a short spike of flowers. A single blossom is an inch and a half long, cylindrical-tube shaped with the limb (end of blossom), an inch across, and of a rich blood-colour. It is exceedingly neat and handsome.

AZALEA DILECTA. In the greenhouse we saw this very handsome seedling in fine bloom. The flowers are large, form and substance very good. The ground colour is of a salmon-pink, and the upper segments having each a deep purple stain, or blotch. The entire flower has a very clear *white edging*, about a quarter of an inch broad. It is a very handsome variety, well meriting a place in every collection.

FUCHSIAS. We saw a number of standard plants, each having a clear stem from two to four feet high, with uniform heads. These, when in bloom, will have a pretty appearance.

APHELANDRA PORTEANA. Another fine stove plant, the leaves of a rich green with metallic silvery-white veins; very pretty. The fine terminal heads of flowers are of a beautiful orange; both corolla and bracts being alike in colour. Mr. Van Houtte possesses the plants. By judicious cultivation at successive periods, all the fine plants of this genus may be had in bloom at any time of the year; they are valuable for winter bloom.

Showy flowering Plants, now in bloom in the Royal Gardens at Kew.

STOVE. *Gloxinia discolor*, light blue, with a dark purple front, and a broad stripe of white inside the blossom; very neat.

FUGONIA PAPILLOSA. In all respects has the appearance of a Begonia. Grows erect, and the blossoms (in panicles) white, tinged with green; pretty.

ERANTHEMUM ALBIFLORUM. It is a stiff bushy plant. The flowers are produced in spikes, five petalled, of a pure white; pretty. *Cypripedium barbatum*, in fine bloom, very pretty.

GREENHOUSE. *Indigofera gracilis*, a dwarf bush, foliage pinnate, neat. Flowers of a rosy-purple, pea formed, in profusion.

Pultænea polygalifolia. A neat bushy plant. Flowers pea-formed, a bright golden yellow, each half an inch across, in profusion; very handsome.

Pultænea Junipera. A neat plant with heath-like foliage. Flowers deep yellow with a red keel; pretty.

Indigofera Australis. Neat pinnate foliage, flowers a rosy-red, pretty:

Podolobium trilobatum. Neat holly-like foliage, and forms a pretty bush. Flowers, pea-formed, yellow with red keel; very pretty.

Loddigesia oxalidifolia. A neat bush, with oxalis-like foliage. Flowers pea-shaped, flesh coloured, in profusion.

Goodia pubescens. A neat bush with pretty small foliage. Flowers pea-like, half an inch across, bright yellow with a dark eye, in profusion, and very pretty.

Boronia tetrandria. A neat bushy plant, foliage pinnate. Flowers in long spikes, flesh coloured.

B. macrophylla. A neat bush, flowers white, tinged with lilac, in profusion; very pretty.

B. crenulata. Neat bush, small leaves; flowers of a rich rosy red, each half an inch across; pretty.

B. fragrans. A neat bush, flowers a deep pink, each half an inch across.

B. uniflora. A neat bush, foliage pinnate. Flowers a deep pink, in great profusion; very pretty.

Chorozeuma macrophylla. A neat bush, leaves medium-sized. Flowers rich orange, with a deep red keel that is divided into two spreading parts; very pretty.

Pullænia biloba. A neat bush, with small foliage. Flowers pea-like, half an inch across, a deep yellow with red eye, in vast profusion; very pretty.

Comaclinum aurantiacum. The plant is eighteen inches high, neat ash-like leaves. The flowers are in form very similar to those of a large zinnia of the richest deep orange colour; very pretty.

Mitraria coccinea. A fine plant; its large, exceedingly handsome scarlet pendant flowers being the admiration of all who see it.

Boronia Molina. A neat bushy plant. Flowers borne in long spikes, each blossom half an inch across, rosy-lilac, with a striking yellow centre of anthers. Very pretty.

Deutzia gracilis. These neat bushy plants, in most profuse bloom, with its large racemes of pure white flowers, render it one of the most charming. It ought to be in every greenhouse or sitting-room window.

Chorozeuma elegans. A neat bushy plant, which blooms in vast profusion. The flowers are of a rich orange colour, with a light yellow eye, and a rose-coloured keel. It is very handsome.

Begonia miniata. It has the habit of *B. fuchsoides*, but the flowers are of a fine orange colour. It is a handsome stove plant, and ought to be in every one.

Gloxinea macrophylla variegata. The leaves are large, eight inches long by six broad, of a velvety shaded green, with striking white veins; very handsome. The flowers are a light blue, with a white stripe down the inside.

Azalea alba-major. Flower large, fine form, good substance, white, with some of its blossoms having a purple stripe. A profuse bloomer.

Azalea Perryana. Flowers a fine orange-red, produced in vast profusion; very showy.

Azalea sicnsis. The flowers of a rich yellow; very pretty.

Chorozeuma Lawrenceana. Foliage holly-like, and the flowers of a copper and yellow, with purple keel; pretty.

REMARKS ON FORCING ROSES.

BY MR. JAMES MAYOR, GARDENER TO WILLIAM WALKER, ESQ., SUMMERFIELD,
BOWDON, ALTRINCHAM, IN CHESHIRE.

As these are such favourites, we feel inclined to offer a few remarks on the winter culture of them, believing that any observations connected with these plants will be acceptable, although we are already aware that much has been said and written upon this subject, and in a way, too, highly creditable to the writers; and though we by no means wish to insinuate that the following method of forcing roses in winter is new, yet the particulars of the same may prove subservient to some of your readers. As there are several points to be considered in Rose-forcing, we will notice them separately; viz., *compost, watering, drainage, temperature, &c.*

First. COMPOST.—Roses, under nearly all circumstances, like a rich soil; but this is not a sufficient elucidation, because soils may possess too nutritive properties; and, again, the nutriment contained in the soil may be of a character not only differing from the requirements of the plant, but extremely pernicious to the health of the same. The kind of soil, or rather compost, which the Rose delights in is decomposed turf, such as has been taken from a pasture field, and allowed to remain perhaps two years in a heap; to this add a little thoroughly decomposed dung,—that from an old hot-bed would perhaps be preferable. The first-mentioned material, however, cannot always be had; therefore we would suggest that anything next to it, of a fibrous nature, provided it be not peat, strongly act as a substitute. It is the practice with some who force Roses in winter, to sift the soil. This we most decidedly condemn, for reasons which will be shown hereafter.

The next point is **WATERING**, to which, with these plants, we cannot give too much attention. Roses in winter are particularly subject to the greatest of pests, *mildew*. Mildew, however, is not always attributable to injudicious applications of water, although too often so; but from a deficiency in the drainage, and a close stagnant atmosphere, we sometimes see the whole three combine, when mildew is, as a matter of course, inevitable. But any of these three is alone sufficient to produce mildew, without any co-operation. When water is required, give it *liberally*, so as to dispense with that bad practice of dribbling, or just wetting, the surface, while the remainder of the ball remains dry.

DRAINAGE is a very important point in the cultivation of all plants, but more particularly so in what is termed pot-culture, or the cultivation of plants in pots. We drain our pots for Roses as follows:—A piece of pot that will just fit the bottom goes first, then a layer of smaller pieces; at the top of these, again, are about three pieces of turf, these being large enough to cover the broken pieces of pots. This will be found sufficient to carry away *quickly* any water that may be administered to the plant. In addition to this, the compost is *very*

open, being, as we should have said before, lumps instead of the dusty material too often made use of.

TEMPERATURE.—Plants of any kind suffer or lose a great amount of their strength and beauty by being subjected suddenly to a high temperature, and at any time if the same is stronger than the nature of the plant requires.

Being provided with the requisite number of plants, the next point for our consideration is the time of starting, and the amount of heat necessary to start or break them. Although the time of introducing them to heat must be determined by the time they are wished to flower, yet suppose we introduce some of them in November, care must be taken to break them *by degrees*, and water be supplied carefully. The temperature of the house to which they are first introduced should, as we recommend, be about 45° to 50°. This will be found sufficient to break them; and if not required early, will be adequate for their further development. As soon as they have formed their flower-buds, clear liquid manure may be given with safety; for at this time the pots will, or should be, full of roots, therefore rendering the application of extra stimulants less dangerous.

When they have done flowering, and the season has advanced as far as the end of April or the beginning of May, we turn them out of doors, giving them water if required, and lay them on their sides, on coal-ashes. The situation should be a sheltered one, and where they will not be exposed to the full power of the sun's rays.

SOME OBSERVATIONS UPON THE SLEEP OF PLANTS,

AND AN ACCOUNT OF THAT FACULTY WHICH LINNÆUS CALLS
VIGILIE FLORUM,

WITH AN ENUMERATION OF ALL THE PLANTS WHICH ARE
SUBJECT TO THAT LAW.

READ BEFORE THE ROYAL SOCIETY, JANUARY 26, 1758.

Communicated by Mr. Richard Pultney.

EXTRACTED BY MR. JAMES SMITH, BELLE Vue VILLA, NEAR LIVERPOOL.

EVERYTHING connected with what are usually denominated *flowering plants* is highly interesting, and, to a careful observer, full of instruction; and perhaps in none is it more so than in the SLEEP OF PLANTS. Recently meeting with the following remarks upon that natural peculiarity, I hasten to forward them for insertion in the May Number of the CABINET, as during that month many of the flowers described therein will be in bloom, and others in the successive months of the season; it will thus afford opportunities to many readers hereof to see the truthfulness of the statements, in the certain and regular process which the various plants display, at the times and periods mentioned. It may also suggest to some observant admirers of plants, to ascertain what other plants than herein described come under their notice,

possessing similar properties, and we may hope to have additional particulars in future Numbers of this Magazine.

Acosta and Prosper Alpinus, who both wrote near the conclusion of the sixteenth century, are, I believe, the first who recorded that nocturnal change in the leaves of plants, which has since been called *somnus*. It is an observation, indeed, as old as Pliny's time, that the leaves of Trefoil assume an erect situation upon the coming of storms. The same is observable of our Wood Sorrel; and Linnæus adds, of almost all plants with *declinated stamina*. In the *Trifolium pratense-album*, or common white-flowered meadow trefoil, it is so obvious, that the common people in Sweden remark it, and prognosticate the coming of tempests and rain from it.

The examples of sleeping plants instanced by Alpinus are but few. That author says that it was common to several Egyptian species, but specifies only the *Acaciæ*, *Abrus*, *Abrus*, *Sesban*, and the Tamarind-tree. Cornutus some time afterwards remarked this property in the *Pseudo-Acacia Americana*. From that time it has remained almost unnoticed till Linnæus, ever attentive to Nature's works, discovered that the same affair was transacted in many other plants; and his observations have furnished us with numerous and obvious examples thereof. Mr. Miller mentions it in the "*Medicago Arborea*," Lin. Sp. pl. 778; and we may add to the list two other common plants not mentioned by Linnæus: these are, the *Phaseolus vulgaris*, common Kidney bean, and the *Trifolium pratense purpureum majus* or Clover grass; in both which this nocturnal change is remarkably displayed. Doubtless the same property exists in numberless other species; and future observation will very probably confirm Dr. Hill's sentiment, that "no plant or tree is wholly unaffected by it."

It is now more than twenty years since Linnæus first attended to this quality in plants. In his "*Flora Lapponica*," when speaking of the *Trifolium pratense album*, as above mentioned, he remarks that the leaves of the *Mimosa*, *Cassia*, *Bauhinia*, *Parkinsonia*, *Guilandina*, and others in affinity with them, were subject to this change in the night-time: and he had then carried his observations so far, as to find that heat and cold were not the cause of this quality: since they were alike influenced by it when placed in stoves, where the temperature of the air was always the same.

The merit of reviewing this subject is therefore due to the illustrious Swede, and the naturalist is greatly indebted to him for so far extending his observations thereon. The revival of the subject has led the way to an explanation of its cause. This Linnæus had left untouched. The honour of this discovery is due to our countryman, Dr. Hill, and his ingenious and elegant explanation of it demands applause. Every acquisition of knowledge in this way should be steadily pursued. The economy of Nature is ever worthy of our regard, and every step gained in the investigation of her principles may lead the way to great, though at present latent usefulness.

The subject of *Somnus plantarum* cannot but be highly entertaining to the lovers of natural knowledge; and such, I apprehend, cannot be

less entertained with that faculty which Linnæus calls *Vigiliæ florum*, of which we shall give a brief account.

Previous to our explanation of this affair, it is proper to observe, that the flowers of most plants after they are once opened, continue so night and day, until they drop off, or die away. Several others, which shut in the night-time, open in the morning, either sooner or later, according to their respective situation in the sun or shade, or as they are influenced by the manifest changes of the atmosphere. There are, however, another class of flowers which make the subject of these observations observe a more constant and uniform law in this particular. These open and shut duly and constantly at certain and determinate hours, exclusive of any manifest changes in the atmosphere; and this with so little variation in point of time, as to render the phenomenon well worth the observation of all whose taste leads them this way.

This faculty in the flowers of plants is not altogether a new discovery; but we are indebted to the same hand for additional observations upon this head likewise. It is so manifest in one of our common English plants, the *Tragopogon luteum*, that our country-people long since called it, "*John go to bed at noon*." Linnæus's observations have since extended to near fifty species, which are subject to this law. What we find principally upon this subject is in the "*Philosophia Botanica*," p. 273. We will enumerate these plants, and mention the time when the flowers open and shut, that those who have opportunity and inclination may gratify themselves, and probably at the same time extend this branch of botanic knowledge still further.

It is proper to observe, that as these observations were made by Linnæus, in the academical garden at Upsal, whoever repeats them in this country will very probably find that the difference of climate will occasion a variation in point of time; at least this will obtain in some species, as our own observations have taught us; in others, the time has corresponded very exactly with the account he has given us.

Whether this faculty has any connection with the great article of fecundation in the economy of flowers, I cannot determine; in the meantime, it is not improbable. Future and repeated observations and well adapted experiments will tend to illustrate this matter, and it may lead the way to a full explanation of the cause.

1. *Anagallis flore Phœniceæ* (*Anagallis arvensis*).—The male Pimpernel.—The flowers of this plant open about eight o'clock in the morning, and never close till past noon. This plant is common in kitchen gardens and in corn-fields, and flowers in June, and continues in flower three months.

2. *Anagallis cærulea* (Syn., *A. monelli*).—Blue-flowered Pimpernel, with narrow leaves. The flowers of this plant observe nearly the same time in opening and shutting as the foregoing.

3. *Convolvulus peregrinus* (Syn., *C. tri-colour*).—Little blue Convolvulus or Bindweed.—This opens its flowers between the hours of five and six in the morning, and shuts them in the afternoon.

4. *Phalangium parvo flore ramosum*. Branched Spiderwort, with a

small flower.—These open about seven in the morning, and close between the hours of three and four in the afternoon.

5. *Lilium rubrum* (Syn., *Hemerocallis fulva*).—The Day Lily.—The flowers open about five in the morning, and shut at seven or eight in the evening.

6. *Plantago aquatica minor* (Syn., *Alisma ranunculoides*).—The lesser water Plantain.—During its flowering-time only opens its flowers each day about noon.

7. *Caryophyllus Sylvestris prolifera* (Syn., *Dianthus prolifera*).—Proliferous Pink.—The flowers expand about eight in the morning, and close again about one in the afternoon.

8. *Spergula purpurea* (Syn., *Arenaria rubra*).—Purple Spurrey.—These expand between nine and ten in the morning, and close between two and three in the afternoon. This little plant is common among the corn in sandy soil, and flowers in June.

9. *Portulacca latifolia sativa* (Syn., *Portulacca oleracea*).—Common Purslain.—Opens its flowers about nine or ten in the morning, and closes them again in about an hour's time.

10. *Ficoides Africana* (Syn., *Mesembryanthemum chrystallinum*).—Diamond Ficoides, or Ice plant.—The flowers of this plant open at nine or ten, and close at three or four in the afternoon.

11. *Ficoides Africana barbatum* (Syn., *Mesembryanthemum barbatum*).—The flowers expand at seven or eight in the morning, and close about two in the afternoon.

12. *Ficoides Neapolitana* (Syn., *Mesembryanthemum nodiflorum*).—The flowers of this plant open at ten or eleven in the morning, and close at three in the afternoon.

13. *Mesembryanthemum linguiforme*.—Ficoides, with a tongue-shaped leaf.—These open at seven or eight in the morning, and are closed about three in the afternoon.

14. *Nymphaea Alba*.—White Water Lily.—This plant grows in rivers, ponds, and ditches, and the flowers lie upon the surface of the water. At their time of expansion, which is about seven in the morning, the stalk is erected, and the flower more elevated above the surface. In this situation it continues till about four in the afternoon, when the flower sinks to the surface of the water, and closes again.

15. *Papaver erraticum nudicaule*.—Wild Poppy, with a naked stalk, and a yellow, sweet-smelling flower. It opens at five in the morning, and closes at seven in the evening.

16. *Alyssoides incanum* (Syn., *Alyssum sinuatum*).—Hoary Madwort, with sinuate leaves.—The flowers of this plant expand between the hours of six and eight in the morning, and close at four in the afternoon.

17. *Abutilon repens* (Syn., *Malva Caroliniana*).—Creeping Indian Mallow, with leaves like the Vervain mallow, and a flesh-coloured flower. These open at nine or ten in the morning, and close at one in the afternoon.

18. *Tragopogon luteum* (Syn., *T. pratense*).—Yellow Goat's-beard, or *Go to bed at Noon*.—The latter of these names was given to this

plant long since, on account of this remarkable property. The flowers open in general about three or four o'clock, and close again about nine or ten in the morning. These flowers will perform their *vigilia*, if set in a phial of water within doors, for several mornings successively; and I have sometimes observed them to be quite closed from their utmost state of expansion in less than a quarter of an hour. It flowers in June.

19. *Tragopogon gramineus* (Syn., *T. hybridum*).—Rose-coloured Goat's-beard.—These open between five and six in the morning, and close about eleven.

20. *Sonchus tingitans* (Syn., *Scorzonera tingitana*).—African Sow-thistle, with a poppy leaf.—This plant opens its flowers between four and six in the morning, and closes them again in about three hours.

21. *Sonchus repens* (Syn., *S. arvensis*).—Tree Sowthistle.—These flowers expand about six or seven, and close between eleven and twelve in the forenoon. This is common in corn-fields, and flowers in June, July, and August.

22. *Sonchus lœvis* (Syn., *S. oleraceus*).—Smooth or upright Sow-thistle, or Hare's Lettuce.—These open about five in the morning, and close again at eleven or twelve.

23. *Sonchus cœruleus* (Syn., *S. Alpinus*).—Blue-flowered mountain Sowthistle.—These open about seven, and close about noon.

24. *Sonchus tricubitus* (Syn., *S. palustris*).—The greatest marsh-tree Sowthistle.—It expands its flowers about six or seven, and closes them about two in the afternoon.

25. *Lactuca sativa*.—Garden Lettuce.—Opens its flowers about seven, and closes them about ten in the forenoon.

26. *Dens leonis* (Syn., *Leontodon taraxicum*).—Dandelion.—It expands at five or six, and closes at eight or nine in the forenoon. This flowers early in the spring and again in the autumn.

27. *Dens leonis hirsutus* (Syn., *Leontodon hispidum*).¹ Rough Dandelion, or Dandelion Hawkweed.—This plant opens its flower about four in the morning, and keeps expanded till three in the afternoon; flowering in May.

28. *Hieracium minus* (Syn., *Leontodon autumnale*).—Hawkweed or Yellow Devil's-bit.—The flowers open about seven, and keep in an expanded state till about three in the afternoon. It flowers in July and August.

29. *Pilosella repens* (Syn., *Hieracium pilosella*).—Common creeping Mouse-ear.—Opens about eight in the morning, and closes about two in the afternoon. Very common on dry pastures, flowering in June and July.

30. *Hieracium murorum*.—Golden Langwort.—The flowers of this expand about six or seven, and close about two in the afternoon, upon old walls; flowering in June and July.

31. *Hieracium angustifolium*, (Syn., *H. umbellatum*).—Narrow-leaved bushy Hawkweed.—The flowers of this species expand about six in the morning, and remain open till five in the afternoon.

32. *Hieracium latifolium* (Syn., *H. sabandum*).—Broad-leaved, bushy Hawkweed. These flowers are in their expanded state from

about seven in the morning till about one or two in the afternoon. In woods, flowering in June and July.

33. *Hieracium montanum* (Syn., *H. paludosum*).—Succory-leaved Hawkweed.—The flowers expand about six in the morning, and close about five in the afternoon.

34. *Hieracium luteum glabrum* (Syn., *Crepis tectorum*).—Smooth succory Hawkweed.—The flowers of this plant expand about four in the morning, and close about noon.

35. *Hieracium Alpinum*.—Mountain Hawkweed.—These open about five or six, and close at eleven in the forenoon.

36. *Hieracium dentis-leonis* (Syn., *Crepis rubra*).—Hawkweed of Apulia, with flesh-coloured flower.—The flowers remain in their expanded state from six or seven in the morning, till one or two in the afternoon.

37. *Hieracium ectriodes* (Syn., *Picris echinoides*).—On banks, about hedges, and about the borders of fields, flowering in August. These expand about four or five in the morning, and never close before noon; sometimes they remain open till nine at night.

38. *Hieracium Alpinum latifolium* (Syn., *Hypochaeris maculata*).—Broad-leaved Hungarian Hawkweed.—These flowers are in their vigilating state from six in the morning till four in the afternoon.

39. *Hieracium ramosum* (Syn., *Hypochaeris Achyrophorus*).—This plant opens its flowers about seven or eight in the morning, and closes them about two in the afternoon.

40. *Hieracium minus dentis leonis* (Syn., *Hypochaeris glabra*).—These expand about nine in the morning, and close about twelve or one o'clock.

41. *Hieracium falcatum alternum*.—The flowers open at five or six, and close between the hours of ten and one.

42. *Hedypnois annua* (Syn., *Hyoseris Hedypnois*).—The flowers open at seven or eight, and close again at two in the afternoon.

43. *Hieracium montanum* (Syn., *Lapsana chondrilloides*).—Mountain Hawkweed.—The flowers are in their expanded or vigilating state from five or six in the morning till about ten.

44. *Cichoreum Sylvestre* (Syn., *Cichoreum Intybus*).—Wild Succory.—On the borders of fields, flowering in August and September. The flowers open about eight in the forenoon, and keep expanded till about four in the afternoon.

45. *Calendula arvensis* (Syn., *C. officinalis*).—Wild Marigold.—The flowers expand from nine in the morning till three in the afternoon.

46. *Calendula foliis dentatis* (Syn., *C. pluvialis*).—Marigold, with cut leaves.—The flowers expand from seven in the morning till three or four in the afternoon. Linnæus observes of this plant, that if its flowers do not expand about the usual time in the morning, it will almost assuredly rain that day; with this restriction indeed, that the plant is not affected by thunder showers.

47. *Sonchus pedunculis squamatis* (Syn., *Lactuca salicifolia*).—Of this plant it is remarked, that whenever the flowers are in the expanded state in the night-time, the following day generally proves rainy.

PLANTS ADAPTED FOR FORCING.

(Continued from page 55.)

BY MR. JAMES MAYOR, GARDENER TO E. LISTER, ESQ., CASSIA LODGE, OVER
CHESHIRE.

LOBELIA GRACILIS. This is a very pretty and particularly useful plant, both in summer and winter. It is admirably adapted for the edgings of beds, but certainly not cultivated so generally as it deserves. It has been sufficiently long in this country to have become perfectly well known, having been introduced since about the year 1801. The flowers of this plant, we must admit, are small, yet the quantity (as it is a free flowerer) amply compensate for their diminutiveness. It thrives well in a mixture of sandy peat and leaf mould. To flower this in *winter* involves a *trifling* amount of labour or attention. This, added to other recommendations, would appear sufficient to raise it high in the estimation of all lovers of flowers; yet, strange as it does undoubtedly appear, it is, comparatively speaking, greatly neglected. The mode of raising and preparing this plant for winter is with us as follows:—In spring, the seeds are sown in pairs, the compost being as above; they are put into some moderate hot-bed, where they remain until the plants have attained a height of about two inches, when they are put singly into five-inch pots, then plunged in some border to remain over summer, when it will be advisable to shift each plant into a larger-sized pot, or one just sufficient to inclose the whole of the roots; then shaded, until the plant or plants survive the disturbance contingent upon their removal; after which they are removed to the house prepared for their reception, and in which it is supposed they will exhibit their beautiful blue flowers. This, like other plants at this season, must be judiciously supplied with water; this however may appear superfluous, having noticed the necessity of carefully watering before; but we are so perfectly aware of the pernicious influence of too copious applications of water, that we hope our recapitulation may be pardoned.

CUPHEA PLATYCENTRA, *Cuphea*, from *Kuphos*, curved, form of capsule. This plant is too well known to require us to enter into the minutiae of the thing; we shall therefore confine ourselves to a few remarks relative to its requirements previous to, and when subject to the winter treatment.

Anything tending to favour economy is, under most circumstances, gladly taken advantage of, but particularly in gardening matters; we think, however, and with good reason too, that the following method of preparing and forcing this plant will admit of no further economizing, having, as we believe, been reduced to the lowest possible scale. We will suppose that the plants in spring are nice healthy-looking *stuff* (if we may be allowed an expression common with the gardening fraternity), occupying five-inch pots; they are planted out into some bed or border, as circumstances determine, where they remain over

summer; during this time, if the weather should be hot and dry, copious applications of water should be made, not only as a preventive against the injurious effects of drought, but to encourage strong growth, which we find most suitable for our purposes in winter. In autumn, as we become apprehensive of the return of *frost*, we lift the plants with as much soil as will, under the circumstances, adhere to the roots, and convey them expeditiously to the potting-shed, and there put into pots; the size of the latter being determined by the dimensions of the ball. The compost used is equal portions of sand, leaf mould, and loam. Particular attention to drainage is requisite. We allow the plants to remain a few days in the shed, and then they are transferred to their place of destination, to enliven the scene with their beautiful flowers.

C. STRIGULOSA may be treated as the above; but the flowers of the latter are by no means so generally admired as the former, consequently not so frequently cultivated either as a *bedder*, or for forcing; but both are extremely subservient, particularly where variety is wanted.

AGERATUM MEXICANUM. This very useful plant is, as its name implies, a native of Mexico, from whence it was introduced about the year 1822. It is considered an annual, and one deserving as much attention as any that we are acquainted with. Its merits as a *bedder* cannot be too highly commended, and as a plant calculated to be of infinite service in winter, we have already had sufficient proof. However, as taste varies, we had better confine our encomiums, and proceed with our observations relative to its culture, which will not only be more acceptable, but of greater advantage than all the commendations we could advance.

CUTTINGS taken from the plants, preserved through winter, strike readily in spring inserted in sand round the edges of pots; and when rooted, they are potted into five-inch pots, the compost being equal parts of loam, peat, and sand. (Lifting being entirely out of the question, unless a little for the surface of the cutting pots.) As soon as the ball becomes sufficiently matted that the plants may with safety be shifted, they are put into about eight-inch pots, and then plunged for the remainder of the season in some border, but where they will not be liable to be drawn or become one-sided. The shoots must be kept pinched, to prevent the plants from getting leggy. Towards the middle of September they are lifted and potted, according to the directions given for the final shift of the *Lobelia*. Shade for a few days, at the end of which the plants may with safety be introduced into the house prepared for them, where they will soon begin to show flower, and ultimately, if due attention to the supply of air and water be paid, we do not hesitate to say that a profuse and successful bloom will assuredly follow.

(To be continued.)

OBSERVATIONS ON THE PÆONY.

BY A COUNTRY CLERGYMAN IN SOMERSET.

"There might ye see the pæony spread wide."—COWPER.

THE growing grandeur of the PÆONY FLOWER, which is so attractive even in our rustic gardens, seems to make it to reign EMPRESS over the floral tribe of humble parterres, and to possess a dignity which forbids the youthful hand to pluck it; and yet how few of the young admirers of Nature's gayest ornaments have not desired to possess a full-blown Pæony to embellish their juvenile garden:

"Scenes of my youth! ye stand array'd
In thought before my longing eye—
In all the change of sun and shade
I see the vision'd landscape lie."

In the emblematical language of flowers, the Pæony is given as a representative of bashful shame. Antiquity celebrates the virtues of the Pæony amongst the *wonders* of the vegetable creation. Fable gives us its origin, Æsculapius its properties, and *superstition* ranks it amongst *miraculous* plants, assuring us that demons will fly the spot where it grows, and that even a small piece of the root worn round the neck is sufficient to protect the wearer from enchantments.

PLINY mentions the PÆONY as one of the first known plants, and that it was so named in compliment to PÆON, a famous physician of antiquity, who, it is said, cured the wounds received during the Trojan war with the aid of this plant; and from him skilful physicians are often called PÆONII, and on the same account those plants which are *serviceable* in medicine are called *Pæoniæ herbæ*.

The ancient writers, who transformed *simple facts* into *fabulous histories*, for the purpose of *deifying* favourite mortals, relate that PÆON, who was a pupil of the great Æsculapius, first received the Pæony on *Mount Olympus*, from the hands of the mother of Apollo, with which he cured Plato of a wound he had received from Hercules; but this cure created so much jealousy in the breast of Æsculapius, that he secretly caused the death of Pæon. Plato, however, retaining a grateful sense of his service, changed him into the flower, which ever after bore his name, except amongst the Italians and Spaniards of modern days, who, in defiance of antiquity, have presumed to name it *Mountain-Rose*, because some of its species grow naturally in the mountainous parts of their countries. Pliny also mentions that it was called *Pentoboran*, and *Glycisides* by some; but these names seem to have been dropped.

The *Pæoniæ corallina* is claimed by *England* as one of its natives, and Gerard informs us, that it grew wild *in his day*, on a rabbit warren, in the parish of Southfleet, in Kent; and this was called the male Pæony, and is the kind the root of which has been so highly extolled in medicine. *P. officinalis*, the superb Double crimson Pæony of our gardens, is a native of Switzerland, as also of the Alps, and has been in England ever since 1580, nearly three hundred years. We now, however, have an immense number of other species and varieties,

upwards of one hundred, which are too numerous to describe in this communication ; but shall be sent for the next month's Number. My principal object now is, to bring to the notice of the readers hereof the *PÆONIA MOUTAN* ; or, *Chinese tree Pæony*. The Chinese have been, from time immemorial, celebrated for their love of flowers, and attention to their cultivation, prior even to the existence of the Babylonian Gardens. That we did not sooner possess, in England, the superb *tree Pæony of China*, may have been owing to the vulgar prejudice which formerly existed, of treating all singular relations as "Travelers' Stories ;" for it was fully described as long back as *two hundred years* ; viz., 1654, when the first embassy which the Dutch East India Company made to China returned to Europe. The account of it was published in London (from a Dutch work), in 1669, and the following extract is from Nievhoff's description :

"There are several rare and well-scented flowers, which grow in these parts of China, that are unknown in Europe. In the province of *Suchew*, near to *Changking*, grow certain flowers called *Meutang* (*Moutan*), in high esteem amongst them, and therefore called the *KING OF FLOWERS*. It is said to have been cultivated in *China* upwards of 1,400 years. It differs very little in fashion from the European Rose, but is much larger, and spreads its leaves further abroad ; it far surpasses the Rose in beauty, but falls short in richness of scent ; it has no thorns or prickles, is generally of a white colour, mingled with a little purple ; yet there are some that are yellow and red. This flower grows upon a bush, and is carefully cherished and planted in all gardens belonging to the *Grandeess*, for one of the most choice flowers."

The Chinese writers differ in their accounts with regard to the origin of this shrub, some attributing it to a particular process of culture, by which the common *herbaceous Pæony* has been converted into this magnificent shrub, which is said to reach the height of ten to twelve feet in the province of Loyang, where the soil and climate is particularly favourable to it. Others of the Chinese authors tell us, and perhaps with more correctness, that the *Moutan* was first discovered growing among the mountains in Northern China, whence it was brought into the southern provinces, and there cultivated with the same *mania* as Tulips have been in Europe, some of the choice varieties of the *Moutan* having been sold in China for one hundred ounces of gold.

When these plants were first introduced into France, M. Noisette, a nurseryman in Paris, sold them from 1,500 to 2,000 francs each. The number of varieties now existing in our European gardens of these *Pæonies* amount to about one hundred ; a list I will supply, nearly all of which I have seen in bloom, some of them being most extraordinarily superb.

In a catalogue I obtained from Standish and Noble, of Bagshot Nursery, I observe that they have recently received some fine varieties ; and they state, "Of the many remarkable plants imported by us from China, these, if judged by the size and beauty of their flowers, are among the most attractive. In the magnitude of their individual

blossoms, in the diversity and richness of their colours, as well as in the profusion in which they are produced, nothing remains to be desired. The following sketch will afford an idea of their general characters. *First, of colour*: of *white* there are examples unsurpassed in intensity and clearness by any other flower, not excepting the old double white camellia. Of *rose* colours there are many shades, as well as of purples, and one rivalling the richness of the *Tuscan rose*. Then there is pale blush, light red, deep red, salmon-colour, primrose, peach-colour, and crimson, with various other tints and combinations of those above mentioned.

Some of the light-coloured ones have the bases of their petals deeply stained with red or purple. Most of the flowers are very double, some semi-double. In shape many are finely cupped; more resemble the finest formed rose; and others have anemone flowers. Of the last-named, a white and a deep red are fine examples. In size, too, they are remarkable; some of the flowers produced last season on small plants measured eight, ten, and twelve inches across.

PROPAGATION.—I have tried the following methods with much success. When the Pæonies are *budding*, about February, a ring of bark, about one-sixteenth of an inch wide, was cut out all round the stem, above and below each bud in the stem or stems to be operated upon. The sap being thus obstructed, the branches were bent down flat, and buried in the ground, only leaving the leading shoot at the end above the ground. These shoots were secured to the place by a hooked peg or two, and occasionally water was given to keep the soil moist. In about six months, nearly every separate piece of the shoot had struck root; I then had them potted, and placed in a cool frame for the first winter, and afterwards planted out in the open ground, or kept in pots, as desirable. The following are the methods of propagation which the Chinese adopt, with surprising success; we are informed, not more than one in a hundred ever fails.

By SEEDS.—These are often obtained very perfect, and to some extent seedlings are raised, sowing them in pots, and transplanting into the open ground to bloom; but this is not so generally practised as are the following methods.

By SUCKERS.—When suckers are produced by an old plant, the earth is carefully removed from about its roots, which are laid bare till the whole of the union of the sucker with the parent root is uncovered. They are then separated, but the wound of the old plant is suffered to remain exposed for a day or two till its surface dries; dry earth is then placed about it, and care is taken that no moisture is applied for the space of a fortnight afterwards. The young sucker is enveloped in fresh leaves, in which state it is kept till the lower end becomes shrivelled, and so much contracted, that the two opposite sides touch each other. It is then planted in rich earth, which is rather dry than otherwise, and kept well shaded till it has rooted; care being taken to guard it from frost.

By SPLITTING.—When the operation of splitting the stem is performed, an old plant is selected, and its stem is regularly slit into four or

six equal portions, from *the top to the very bottom* among the roots; the divisions of the stem are kept apart until the wounds begin to dry, when the middle of the stem is filled with a sort of plaster, made with mortar and rich earth, among which is mixed fat and a small quantity of sulphur. The plant so prepared is suffered to remain till the autumn, when each division is fit to be separated, with the portion of the root belonging to it.

Grafting is practised on the roots of the more common Moutans; when this is attempted, the root of the stock is laid bare during some weeks, to the depth of three or four inches; just before the autumn shoot is made, the earth is again heaped about the root, and soon afterwards, when the sap appears in full motion, the operation is performed. This is done in the way we call crown grafting. A kind of clay made with rich mould, formed into a sort of mortar with the expressed juice of Herbaceous Pæony roots, is then applied about the scion and stock. The plant is afterwards shaded from the sun, and protected from frost during winter; and when the spring arrives, it is left to take its chance. If the scion ever pushes, all danger of losing it is past.

FLORA OF MADEIRA AND ST. VINCENT.

WE reached Madeira on the morning of May 21st. I intended to devote the few days of our stay to the study of the indigenous plants, but the uncertainty of our departure did not allow of distant excursions, and obliged me to limit myself to the vicinity of Funchal. I took immediately a walk along the south-eastern coast with Mr. Lowe, who kindly pointed out the habitat of many indigenous species, amongst which were chiefly *Mathiola Maderensis*, *Sideroxylon Marculana*, &c. On Saturday, 22nd, I was early on horseback, towards the Ribiera Frio; where the choicest native plants are to be found. The road crossed Mount Church, where the barren precipices are at first covered with *Spartium scoparium*, higher up with *Laurus* and *Erica*, and then especially with the magnificent *Vaccinium Maderense*. On the summit it was dreadfully cold, with fog, sometimes like rain. The valley was filled with mist, clearing occasionally, just enough to see the *Laurus-trees* that hung down from the surrounding steepes. This *Laurus*, several interesting *Ferns*, and a few other plants, were, owing to the bad weather, the unexpectedly small produce of this trip. On the succeeding Sunday I chiefly visited the gardens about the town. The singularly favourable situation of Funchal, enjoying, in consequence of the protection afforded by the surrounding mountains against cold winds, an *invariably moderate temperature*, has been frequently dwelt upon. I had plenty of opportunity to observe this; for during my stay the weather was constantly fine and warm, with, at the utmost, a gentle shower; but once beyond the mountains, I experienced the most furious winds, and the valleys were filled with thick mists, loaded with as much moisture as heavy rains. Later in the season the weather is said to be fine and clear. The valley of

Funchal receives several rivulets, and had not at this time any deficiency of water. *Chestnut-trees* abound in the valleys, and the lower declivities are frequently covered with patches of *Pines*. To the gardens at Funchal the prevailing state of the atmosphere is highly genial, and they command splendid prospects towards the town and bay. One really may fancy oneself in the East when walking, and still more when riding between these gardens, which are enclosed with stone walls, over which it is easy to observe the numerous edges of roses full of bloom. The singular spectacle of the union of *Bananas* and *Pine-apples* with our *European fruit-trees* has been frequently noticed, and is particularly attractive to any new-comer. Horticulture, from what I could see, was chiefly practised for profit's sake; though in several gardens there were some choice plants, which struck, on account of their finer growth, the European traveller who had hitherto seen them only in the greenhouse or stove. Large *Dracænas* were rare. Whether this tree still occurs in an uncultivated state I know not: no one collects the *Gum-dragon*, except as a curiosity. Dr. Renton showed me some fine *Coffee-trees*, covered with fruit, of which the quality is said to be good. He regretted that instead of *Festuca Donax*, the *Bamboo* was not more generally grown, as it succeeds so well.

On Monday and Tuesday I made excursions in the valley called the Corral, and to the great waterfall, which yielded me, besides the common plants of Madeira, a few rare ones; viz., *Ranunculus grandiflorus*, *Sempervivum* species, *Sinapidendron frutescens*, *Bystropogon punctatus*, *Bupleurum salicifolium*, *Physalis pubescens*, &c. According to my experience, the flora of Madeira is of a thoroughly South-European character; only a very few plants, chiefly *Dracæna*, pointing out any extra European mixture. I do not speak of the neighbourhood of Funchal; a botanic garden there, established with proper judgment, would lead to very useful results. A novice in travelling revels in the southern forms here first offered to his view.

Of two individual plants I will only here observe, that the indigenous *Parietaria* is that known as *P. diffusa*. Of *Cassia*, I only saw *Cassia bicapularis*, the true species flowering, but not in fruit during my stay. *Cassia ruscifolia*, which is indigenous according to Jacquin, in Madeira, certainly does not grow in the island, as I was informed, and that *Cassia accidentalis* exists only in a single garden. The history of these species remains therefore still obscure.

We left Madeira May 25th, and on June 3rd were off St. Vincent, Cape de Verd Islands. Sailing along the high cliffs of the western coast of St. Vincent, I looked anxiously for some traces of vegetation, but only distinguished far off a few shrubs, and it was dark ere we anchored at Porto Grande. I hastened the next morning early on deck, impatient to survey for the first time an entirely tropical vegetation. The back of the bay is sandy and flat, with a few cottages on the north-east side: beyond the shore rise hills overtopped in the distance by mountains. I could clearly descry two main valleys, reaching far inland, and exhibiting the same white sand as the beach.

Every place was burnt up and bare of vegetation, except a few shrubs in one of the valleys, whither I directed my first walk, and found these were *Tamerix Senegalensis*, a shrub mostly six or seven feet high, but sometimes a small tree, being the only plant, I might almost say the only object which in these valleys affords any shadow. After a search of four hours, climbing several hills, and crossing as many valleys, I only met with two plants, the same *Tamarix*, and a low shrub-like *Labiata* (*Lavendula formosa*?), almost dried up, with a few leaves and blossoms just opening. I found subsequently that this plant spreads over the whole island. The Great Desert cannot exhibit a more desolate aspect than this part of St. Vincent; yet the soil ought to be fertile, for it is a conglomerate of large and small bits of basalt, in a loamy and chalky soil, closely covered in many places with dried grass, forming natural hay, and furnishing scanty fodder to cattle and goats when they have not the *Tamarix* to nibble at. This soil only wants water; and we may guess, from these remnants of its vegetation, how fertile it must be, when supplied during the brief rainy season with some moisture, from August to the beginning of October. To the above mentioned plants of the plain I can add very few more. A small *Euphorbia*, perhaps *prostrata* or *serpyllifolia*, but appearing new to me, a few littoral plants, especially *Zygophyllum Album*, and on the shore *Cassia obovata*, just then in bloom and fruit, extending far up the mountains. This scanty harvest induced me to explore the higher regions for more botanical treasures; but even there I found the same barrenness. The mountain chain rising frequently to 1,500 feet, only afforded me a dozen species on its northern declivity.

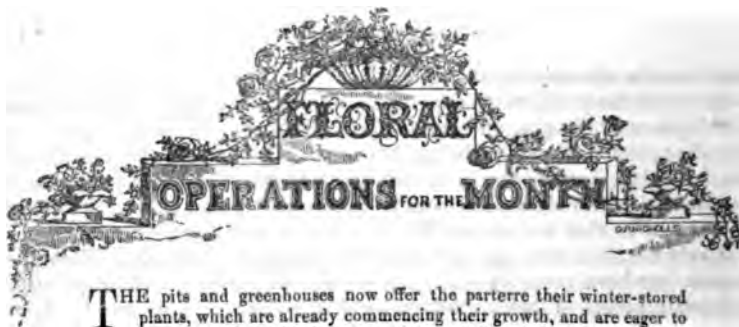
Of the difference between the lower and mountain vegetation I can hardly speak; but it seemed clear that many plants, flourishing on the mountain, did also grow in the lower country, though now dried up.—“*Journal of the Niger Expedition*,” by Dr. VOGEL.

MISCELLANEOUS SECTION.

DRAINAGE OF PLANTS GROWN IN POTS.—The general laws which regulate the vegetable economy are applicable alike to plants grown in the open ground, and to those cultivated in pots: the vegetative principle is never changed or altered, either in plants subjected to artificial treatment, or in those which may be said to occupy a more natural position. In accordance with this theory there is a trite saying, that plants, when grown in pots, should be treated in all essential particulars like those grown in the open ground; or, in other words, that the gardener should do in a pot what the farmer practises in a field; and since the system of drainage effects astonishing results in agriculture, it is not unreasonable to expect similar advantages from its application to the purposes of horticulture. But the operation of draining a pot requires to be performed with a perfect understanding as to the mode in which it is likely to have a beneficial effect. When only a piece of a broken potsherd, or any other substance, is placed over the hole at the bottom of the pot which is being drained, the percolation

and escape of superabundant moisture will, in all likelihood, be prevented by the pressure of the soil around it; the water will lodge at the bottom of the pot, and the roots of the plant will suffer, owing to the free circulation of air being impeded. It is, therefore, reasonable to infer that, besides the principal crock that covers the hole, other or additional materials are necessary. In the first place, the crock should be placed so that it does not lie *flat* over the hole; for, when lying positively flat, it is very apt to stop up the passage of the water. When the crock has been properly placed, it should be covered with a quantity of small pieces of brick, broken pots, angular stones of any kind, or similar materials; above this superstructure, which may range from an inch to two inches in depth, should be placed a layer of the same kind of materials, broken considerably smaller, so that the soil, when placed in the pot, may not choke up the interstices of the under layer, or even fill them too much in being pressed or shaken down. It is now well known that pieces of bricks and bits of charcoal, from their porous texture, act in the manner of a sponge for the azote, which is so essential to the nourishment of plants. Such substances become, in fact, by their physical action and chemical properties, an actual manure for plants. By means of them the soil in the pot is aerated, and the water passing rapidly off, the plant must, of consequence, be under the best condition to secure its health.

It may be readily conceived that if, in this under layer of drainage materials, there was placed a physical body constituted so as to operate in a three-fold manner: to retain one of the elements of the air, the most useful to vegetation; to allow the air to penetrate the mass of soil; and to facilitate the proper passage of the water from the roots—and which, at the same time, by gradual decomposition, incessantly transmitted from below fresh nourishment to the roots—a substance possessing these advantages would certainly be the most suitable to be used in the cultivation of plants in pots. Where great progress has been made in the cultivation of the soil, we see that not only is the ground traversed with drains and properly aerated; but it is also manured with substances which, by their gradual decomposition, minister to the daily requirements of the plants grown. Are similar results not attainable with plants cultivated in pots? We cannot hazard a negative reply to such a question. Some cultivators have adopted the system of draining the pots by means of broken or crushed bones, which, having the same absorbing qualities as the pieces of brick, even in a higher degree, are still more susceptible of gradual decomposition, especially after they have been treated with sulphuric acid weakened by water. The bones thus throw off or disengage a portion of ammoniacal gas, and furnish a quantity of sulphate and calcareous phosphate, all of which are essential to the nourishment of plants. Even for plants which admit only of being grown in peat, the beneficial effects of broken bones as drainage have been fully proved to be considerable and decided.



THE pits and greenhouses now offer the parterre their winter-stored plants, which are already commencing their growth, and are eager to breathe the pure air. Caution must, however, be exercised in being prepared for occasional frosts, with some protection at nights in case of need. If your plans are not yet fully arranged as to bedding out, &c., lose no time; particular attention should be paid with contrasting the colours to give a good effect. A flower-garden may be richly furnished with plants, but be very ineffective if the colours are badly arranged. For producing a brilliant effect in masses, reject party-coloured flowers; only use pure and decided colours, such as scarlet, pure white, deep purple, bright yellow, &c.; those which are in close affinity kill each other. Take care not to mix plants which are of doubtful duration, when in bloom, with those of a more permanent character, remembering always that the beauty of a formal flower-garden depends upon its being in all its details a perfect work of art, in which no blemish should occur. There must be high keeping, symmetry, judicious arrangement of colours (traceable to fixed principles), or it will not form a satisfactory whole. This should be particularly attended to. Many persons plant their stock so thinly, that their beds are not covered till late in the season; we advise thick planting, both for speedy and permanent effect.

When annuals are required for late flowering, they may yet be sown; and hardy annuals that have come up too numerous should be thinned out, so as to retain but enough to be vigorous. Tender annuals, raised in pots or frames, should be taken, with as much soil to the roots as possible, and after the middle of the month be planted out. After all planting is done, the next operations will be training and pegging down the plants; this is a most important process towards having well-furnished beds. Climbing plants will now require training from time to time, according to their growth.

FLORISTS' FLOWERS.—Amongst these we may class the *Antirrhinum*; many of the kinds now in cultivation are exceedingly pretty, and deserve to be grown. Now is the best time to plant them out. *Carnations* and *Picoles* are by this time in their blooming pots; and as they advance in growth, attention will be necessary to stick and tie them up neatly. Stir up the surface-soil of the pots, and add a dressing of mixed loam and well-decayed dung. *Cinerarias*.—As these go out of bloom cut down the stems, which will induce an abundance of shoots for increase, and turn them out into the open ground, where they are partially shaded. *Dahlias*.—The last week in the month is as early as it is safe to commence planting out. The young plants will be greatly strengthened by repotting them into larger pots, giving all the favourable air possible, in order to have them hardy when turned out. *Fuchsias*.—Repot and trim all the plants required for specimens; encourage their growth by frequently syringing them over head. *Pansies*.—Cuttings put in last month may now be planted in a shady bed, for summer blooming. A good watering in dry weather will be necessary. Such as are grown in pots, for show, require particular attention, and by thinning out the side shoots, much finer blooms may be had. *Pinks*.—As the blooming stems advance they will require thinning out. The more robust and very double kinds should have two or three stems left. *Ranunculuses*.—If dry weather continues, water must be liberally supplied; apply it between the roots and not over the foliage, and use rain-water if possible, preferring evening for the operation. *Tulips*.—The top cloth should at once be got on, and never let the sun reach the flowers after they show colour, but give all the air possible.

IN THE FORCING FRAME.

Continue to strike cuttings of stove and greenhouse plants, and pot off such as are struck. Plants intended to be flowering specimens for the greenhouse, such as *Achimenes*, *Gloxinias*, *Gesnerias*, &c., should be grown here, and brought forward as rapidly as practicable. What are termed greenhouse annuals, as *Balsams*, *Cockscombs*, *Salpiglossis*,

Rhodanthe, Thunbergias, &c., should be got on quickly. A strong stimulating soil, copious waterings, and ample pot-room, together with bottom heat, are inseparable necessities to their successful cultivation.

IN THE GREENHOUSE, &c.

A free ventilation is of importance, and by closing with a humid atmosphere early in the evening, a vigorous growth will be best promoted. Give liberal shifts to such plants as now require it before the roots become matted; much injury is often done by deferring until a general shifting. Camellias, such as have formed their flower-buds, should be placed in a sheltered and shady situation out of doors. Ericas should have the ends of their shoots pinched off, to render them bushy and spreading. Climbing plants should be neatly tied as they advance in growth, and abundance of flowers will be the result. Shrubby plants of weak growth, and which naturally make *long frull shoots*, are much improved by bending down the branches, and fixing them to a wire attached to the rim of the pot; in this manner the nakedness of the plant at its base is hidden, and the check imposed on the ascent of sap will induce an increased supply of shoots. Azaleas, when done blooming, *promote their growth*.

Pelargoniums.—Never allow the plants to flag, or the bottom leaves will turn yellow, and the plants then become naked. Put cow, horse, and sheep dung in equal parts, with a sprinkling of quick lime, into a tub, and to one peck of these add five gallons of rain, or other soft water. When taking it for use, draw it off clear, and give the plants a watering twice a week. Give air freely, shut up early, and syringe the plants overhead three times a week, till the flowers expand. Fumigate to keep down green fly.

WATERING.—See the *entire ball* is made moist. A few holes made by means of an iron pin down through the ball will admit water into the interior.

BRIEF REMARKS.

PRESERVING ANTIRRHINUMS THROUGH WINTER AND EARLY PART OF SPRING.—Many of the readers hereof no doubt have had to suffer the loss of a quantity of these plants during winter and spring. I have noticed that a considerable number of self-sown plants upon the top of an old broad brick wall always escaped injury, however severe the frost was, which I supposed was in consequence of being kept *rather dry* at the roots, as well as the tops being preserved from the effects of *too much damp air*.

I strike cuttings in pots about July and August, when the young shoots are about half ripened, cover with a bell-glass, and the pots plunged up to the rim in a spent hotbed, shading them from the mid-day sun. They soon root, and then are potted off into small sixties, three or four in a pot. The pots get filled with roots before winter; I then place them in a frame upon a wood-barred trellis flooring, which is six inches from the ground. The frame is placed upon a brick, laid flat, at each corner, and thus a sufficient draft of air is admitted among the plants, and they are kept from the injurious effects of damp, and the roots are kept duly dry enough. I give all possible air in dry weather, and if continuous wet weather, I have the lights raised six or more inches, to preserve from too much wet, as well as give all necessary air.

I used to lose three parts or more of my plants during the above-named seasons, whether I kept the plants in large pots or the open ground; they used generally to perish in March or the beginning of April. Since I kept them in small pots, as above described, I do not recollect losing one plant. Early in April I separate the plants, pot singly into larger ones, or plant in the open ground, as circumstances require.—J. J. ASHMORE, *Manchester*.

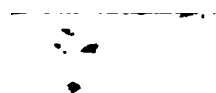
CONCRETE WALKS.—Observing in some recent Numbers of this Magazine the details of the formation of walks, as well as subsequent inquiries being made for additional information, I am induced to forward the particulars of an excellent method which I have adopted. It is not only well adapted for forming admirable walks, but also for its *cheapness*, which latter is of importance in the saving of materials, especially so where they can only be obtained but at a considerable expense. We had a considerable extent of walks which required a better surface, and as gravel was fourpence per bushel, it was necessary we should be economical, and make as thin a coat do as possible, so as to be effectual. A friend of mine, a gardener, had constructed several miles by the following plan; and having seen it succeed so well in all respects, I resolved to pursue the same

method last year, and now the walks are everything that can be desired. I had the old surface of the walks, to the depth of two inches or so, loosened, and then formed properly, so as to duly incline from the centre to the sides, and then the surface made tolerably smooth. This being done, I pursued the following plan, as given me by my friend, being the result of his own practice. He states, "I obtained coarse gravel at a cheaper rate, as well as some excellent grey lime, which we got delivered at eleven shillings per chaldron. To two-thirds of the gravel was added one-third of quick-lime, to which sufficient water was added to render the mass, when well mixed together, to a half liquid state, so that it would just remain in the barrow whilst removing it to the walk. About two inches and a half of this in depth was spread over the walk, and smoothed evenly over, when the materials had become sufficiently dry to bear a person without the foot sinking therein; but before it set hard a lightish roller was passed over it a few times, which produced an even face, so that water could not remain upon it. After being thoroughly dry, about an inch of fine gravel was laid over the entire walk, which was well rolled and made smooth. This process effects a great saving of the best material, and much better walks are the result than those constructed in the usual way; for whilst concrete walks remain unaffected by frost, worms, or deep-rooting weeds, other walks that had been previously formed with brick rubbish as a foundation, and three or four inches of gravel on the surface, have been puffed up by the frost, and the surface of the walks are disfigured by the mounds cast up by worms. As water will not pass through the concrete, a suitable proportion of side drains must be provided. Fresh burnt lime must be used, and the grey is preferable to the white." So far my friend's instructions were attended to, and I find the top coat of fine gravel can be readily loosened without in the least disturbing the concrete, so that a new surface may be effected as often as desirable, and be kept in a neat and clean condition, free from weeds or moss.—J. JACKSON, *Elms House*.

INGA PULCHERRIMA.—This is a very neat shrubby plant, with Acacia-like foliage, and is easily formed into a bush by occasional stopping of the leading shoots. The flowers are in tassel-like clusters, of a brilliant scarlet colour, and produced abundantly when the plant is duly attended to. The flowers are produced on the wood of the *previous year's growth*, so that the plant must not be cut in any other time but *as soon as the bloom is over*, then prune in and repot; get well ripened wood during summer and autumn; and if plants are put in a forcing-house or stove in October or November, they will bloom by Christmas or January, and others brought in in succession will bloom accordingly, so that their very beautiful flowers may be had as ornaments for the stove, greenhouse, or sitting-room from December to July, or later, by suitable treatment. It is easily grown, flourishes in equal parts of leaf mould, good loam, and fibry peat, with a mixture of silvery sand, and a free drainage. I grow it in the greenhouse or pit-frame at all times, except when put into the forcing-house or stove to bring out the blossoms. It is a handsome plant at all times, especially when in bloom, and merits a place in every collection of that class of plants.—WILLIAM ROSS, *Belle Vue, Liverpool*.

THE MOUNT OF ROSES, a circular colonnade, is fast assuming its fairy-like form and proportions in the grounds of the Crystal Palace at Sydenham. It is situated on an elevated mound, and is approached by six winding paths, which meet in an inner circle that is forty-eight feet in diameter, within a colonnade formed of 120 columns. Around the circle are twelve arches, thirty-one feet in height and sixteen in width. One of these arches spans each of the walks leading into the promenade, and there is one arch between every two walks. The spaces between the twelve arches are filled up with smaller arches, the columns supporting which are placed eight feet apart. There is a delightful walk, sixteen feet wide, round the entire colonnade, amid roses of numerous colours, diffusing a delicious perfume. The space between the walks, which radiate towards the centre, are covered with turf, on which seats will be placed. Shelter from rain will be provided beneath the corrugated iron roofs of the circular arches, round the lattice-work of which roses are trained.

NEW HOLLAND PLANTS in general, as *Gastrolobium*, *Pimoleas*, *Boronia*, *Dilwynia*, &c., flourish best in a compost, as follows:—The weaker-growing kinds is a rich turfy, fibry peat, well broken by the hand (not sifted), intermixed with roughish silver sand and gritty sand, a liberal sprinkling, and to have a free drainage. The more vigorous-growing to have in addition to the above a sixth of good mellow fresh loam. A liberal sprinkling of bits of charcoal to both the kinds of plants are very beneficial.—A LONDON PRACTITIONER.





Wellingtonia gigantea



ILLUSTRATIONS.

WELLINGTONIA GIGANTEA.

THIS most magnificent hardy evergreen, Coniferous Tree, from California, has, as many of our readers are already acquainted with, been recently introduced into England by Messrs. Veitch. Their excellent collector of plants, Mr. William Lobb, who lately returned to England, has furnished the following account of this stupendous tree:

"This magnificent evergreen tree, from its extraordinary height and large dimensions, may be termed the monarch of the Californian forest. It inhabits a solitary district on the elevated slopes of the Sierra Nevada, near the head waters of the Stanislaus and San Antonio rivers, in lat. 38° N., long. 120° 10' W., at an elevation of 5,000 feet from the level of the sea. From 80 to 90 trees exist, all within the circuit of a mile, and these varying from 250 feet to 320 feet in height, and from 10 to 20 feet in diameter. Their manner of growth is much like *Sequoia* (*Taxodium*) *sempervirens*, some are solitary, some are in pairs, while some, and not unfrequently, stand three and four together. A tree recently felled measured about 300 feet in length, with a diameter, including bark, 29 feet 2 inches, at 5 feet from the ground; at 18 feet from the ground it was 14 feet 6 inches through; at 100 feet from the ground, 14 feet; and at 200 feet from the ground, 5 feet 5 inches. The bark is of a pale cinnamon brown, and from 12 to 15 inches in thickness. The branchlets are round, somewhat pendant, and resembling a Cypress or Juniper. The leaves are pale grass green; those of the young trees

are spreading, with a sharp acuminate point. The cones are about $2\frac{1}{4}$ inches long, and 2 inches across at the thickest part. The trunk of the tree in question was perfectly solid, from the sap wood to the centre; and judging from the number of concentric rings, its age has been estimated at 3000 years. The wood is light, soft, and of a reddish colour, like redwood or *Taxodium sempervirens*. Of this vegetable monster, 21 feet of the bark, from the lower part of the trunk, have been put in the natural form in San Francisco for exhibition; it there forms a spacious carpeted room, and contains a *piano with seats for 40 persons*. On one occasion 140 *children* were admitted without inconvenience."

The tree is quite hardy, and will endure, it is supposed, our winters without injury, in any part of the United Kingdom.

Mr. Lobb brought a living plant of it, as well as dry specimens of its wood, bark, cones, branches, and seeds, the latter having been sown, Mr. Veitch, of the Exotic Nursery, King's-road, Chelsea, has a considerable number of young plants, which will be sent out to order as soon as they are sufficiently established.

What a valuable acquisition is this monstrous, *beautiful evergreen* tree to this country! and no doubt it will become the principal *vegetable ornament* in every park, city, town, village, and hamlet throughout the country.

All must agree, at least in our own country, at the very appropriate name it bears to commemorate the greatest of modern heroes, WELLINGTON. Architectural statues in honour of renowned warriors have been reared, and others are in course of erection, in the populous places of our country, but at no very remote age these perishable materials will fail: yet the WELLINGTONIA GIGANTEA MONUMENTS will in each successive age increase in grandeur to a period which we shall not attempt to define, whilst the estimate of the age of those which Mr. Lobb discovered is, as above-stated, three thousand years.

Messrs. Veitch are highly entitled to the thanks of the public for their zealous, *but expensive*, efforts to enrich this country with the noble as well as beautiful plants of other climes. The best method of testifying to them of our thanks will be to purchase extensively of them what they so liberally have imported. This we think our countrymen in general will be disposed to do.

NOTES ON NEW AND RARE PLANTS.

ANGRÆCUM PERTUSUM.—*The Perforated*. A stove orchid, which is a native of Africa, and bloomed first in England with Messrs. Loddiges, and now in the collection at the Royal Gardens, Kew. It is of rather small size. The spike of flowers, drooping, is about five inches long, formed of numerous small greenish-white flowers, tinged at the end with yellow. (Figured in *Bot. Mag.*, 4782.)

BARKERIA ELEGANS. A stove orchid from Mexico, introduced by G. Barker, Esq., of Springfield in England. The flowers are produced in loose racemes, four or five in each. Each blossom two inches across,

petals and sepals large, spreading, white tinged with bluish inside, and delicate lilac-purple outside. *Lip* white with deep rose-coloured large blotches; and the *column* white, dotted with purple, and stained with yellow. The flowers are very handsome. It is in the collection at Messrs. Jackson of Kingston. (Figured in *Bot. Mag.*, 4784.)

DESFONTAINIA SPINOSA. Natural order probably *Solanaceae*, but its appearance is very different from any other of that order we have seen. It is a stiff, erect-growing shrub, with glossy, *holly-like* foliage, each leaf being nearly three inches long. The flowers are in form like those of a *Correa*, two inches long, drooping, of a fine scarlet colour, tipped with rich yellow. The plant blooms freely, and its flowers are very handsome. Mr. Lobb discovered it in Valdivia, South America, and sent it to Messrs. Veitch's, where it has bloomed. It merits a place in every greenhouse. (Figured in *Bot. Mag.*, 4781.)

IMANTOPHYLLUM MINIATUM. A very superb flowering *Amaryllidaceous* plant, which has been imported from Natal, in South Africa, by Messrs. Backhouse, of the York Nursery, where, in the *greenhouse*, it bloomed last year. It is nearly allied to the *Clivia*. The leaves are long, and two inches broad. The flower stem rises about a foot high, supporting an *umbel* of *twelve to fifteen* flowers. Each blossom having a foot-stalk about three inches long. A separate blossom, of six petals, when fully expanded, is about four inches across. The flowers expand about two at a time daily, or in two days or longer periods, but remain so long in bloom as to form, along with the others also expanded, a *fine head* for from two weeks to a month, according to temperature. Messrs. Backhouse state: "Our old plant has for the last two years produced fresh leaves and a flower stem about *every four months*. It has sent off several suckers." The *corollas* are deciduous, as in *Clivia*, to which I think the plant certainly nearer than to *Vallota*. The flowers are of a brick-red, with the lower portion of the petals of a yellow tinge. It merits a place in every greenhouse. (Figured in *Bot. Mag.*, 4783.)

SCHIEERIA MEXICANA CÆRULESCENS. — (Synonyme, *Achimenes Scherii*.) The plant is as robust, and the flowers as large, as those of *Achimenes grandiflora*. The present plant, it appears, is very distinct from the *Scheerü Mexicana*, whose stems, and veins of the leaves, are deeply tinged with purple, whilst those of the *Scheeria Mexicana cærulescens* are *entirely green*. The flowers of the former too are of a purple colour with a white throat, and those of the latter are blue with a tinge of red. The blossoms much resemble those of a fine-shaped *Gloxinia*, very handsome. They merit a place in every collection.

AZALEA INDICA VITTATA. The flowers are large, white-streaked, with lavender, purple, and a tinge of yellow on the upper segments, spotted with red, very handsome. (Figured in Mr. Van Houtte's *Flore des Serres*.)

AZALEA INDICA VITTATA PUNCTATA. Flowers large, white, beautifully streaked and spotted with rosy-lilac, very handsome. (Figured in Mr. Van Houtte's *Flore des Serres*.)

AZALEA INDICA STRIATA FORMOSISSIMA. Flowers large, which,

good form and substance, white flaked and spotted with light purple; very handsome. (In Mr. Veitch's collection.)

AZALEA INDICA SYMMETRY. A beautiful salmon-pink, of exquisite form, nearly *filling up* a complete circle, and of good substance. One of the very best.

AZALEA INDICA.—Beauty of Europe. It has the habit of *A. variegata*. Flowers fine shape, flesh colour, with a white margin, beautifully spotted and striped with carmine.

AZALEA INDICA GLEDSTANESII FORMOSA. Flowers good form and substance, white, with cherry-coloured streaks, very pretty.

AZALEA INDICA GLEDSTANESII EXCELSA. Violet and rose, fine form.

AZALEA INDICA JULIANA. Fine crimson, excellent form.

AZALEA INDICA CHELSONII. Fine orange-scarlet, excellent form.

AZALEA INDICA ASCENDENS. A bright red, fine form and substance,

SALVIA IANTHINA. This *Salvia* has the habit of *Salvia splendens*, and blooms very freely. The corolla, calyx, and bracts, are of a rich purple violet colour, and are strikingly-handsome. Each blossom is about two inches long. They are produced in large, terminal, long-spiked heads, and make a fine contrast with the other species. (Figured in *Flore des Serres*.)

BEGONIA MINIATA. A compact bushy plant, of the habit of *B. fuchsioides*, bearing large drooping racemes of salmon-orange coloured flowers. Very pretty.

CANNA WARSCIEWICZII. A compact growing plant, blooming freely through winter. The flowers are a rich crimson colour.

ECHITES PELLERII. A compact growing plant, blooming very freely. The flowers are of a beautiful yellow colour.

GLOXINIA LEONINE VAN HOUTTE. Flower very distinct and handsome, a delicate pink with white centre, and the white extends all round the throat, also of good form.

GLOXINIA WHITE PERFECTION. It has the habit of a *Sinningia*, with deep green glossy leaves, and pure white flowers, blooming for several successive months.

LAGERSTRÆMIA INDICA ROSA. A dwarf bushy plant, blooming in profusion. The flowers are borne in large branching panicles, drooping, of a beautiful rosy-pink colour. Ought to be in every stove and warm greenhouse.

PASSIFLORA DECAISNIANA. It belongs to the *P. quadrangularis* section. Flower very large, petals a rich lilac-purple; centre blue and white. It blooms freely through winter. A valuable acquisition.

BEAUFORTIA PURPUREA. A compact, neat shrubby plant, with Acacia-like neat foliage, bearing a profusion of tassel-like thread-formed flowers, of a bright crimson colour. Merits a place in every greenhouse.

DILLWYNIA CINNABARINA. A neat evergreen shrubby plant, bearing a profusion of vermilion-coloured pea-shaped flowers, very pretty.

DILLWYNIA SCABRUM. A neat evergreen shrub, produced in pro-

fusion its clusters of pea-shaped flowers, of a rich scarlet, edged with bright yellow. A very handsome species, and deserves a place in every greenhouse.

HYDRANGEA HORTENSIS FLORE-PLENO. No doubt every reader hereof has admired the noble *Hydrangea* of our houses and gardens. There now exists a *double blossomed* variety, which has been raised on the continent, and plants can now be had in our own country. Its flowers too may probably be changed to blue, as is the case with the old species.

EPACRIS MINIATA GRANDIFLORA. It is more robust, bushy growing plant than *E. miniata*, and the flowers are much larger; tube bright crimson, tipped with pure white, very superior to the *E. miniata*.

EPIPHYLLUM TRUNCATUM, VARIETY SNOWII. The plant is dwarf and spreading, blooms profusely. The flowers are of a bright shining purple. It is a charming winter-blooming plant, and ought to be in every greenhouse.

ERIOSTEMON PULCHELLA. A small, neat growing greenhouse shrub, very distinct; flowers white.

GAMPHOLOBIUM ALBUM. A dwarf compact-growing plant, with flowers of a creamy-white. Very distinct and handsome.

HOVEA BERENSII. The foliage, as well as the flowers, are larger than *H. Celsii*; the blossoms are of a rich blue colour, very fine.

PASSIFLORA BENOTTII. An hybrid between *P. cœrulea* and *quadrangularis*. Petals of a beautiful fleshy pink and green, with the centre blue. Very handsome, and ought to be in every greenhouse, either to train at large, or grown in a pot, and trained to a wire frame work.

VERONICA SPECIOSA VARIEGATA. A very pretty variegated variety.

HEDAROMA TULIPIFERA.—(*Genetylis tulipifera* of some.) Mr. Drummond discovered this pretty, shrubby plant in Australia. It has somewhat the appearance of a *Beaufortia decussata*, or *Pimelea decussata*. The flowers are produced at the ends of the branches, drooping, greenish-white *cups*, each about an inch and a half deep, stained with dull red, and at the base passing into leaves, but the real flowers stand in a crowd within the base of the *cup*, which is an involucre. Each flower is inclosed by two scales, the upper half of which is stained with rich crimson. Mr. Drummond stated that the flowers hung like bells, or reversed tulips, at the ends of the under branches. Mr. Backhouse, of York Nursery, we believe, first introduced this fine plant into this country. The following are very pretty hardy herbaceous plants, now in bloom :—

Pentstemon nitida. It is a dwarf spreading plant, with shining green foliage. The floral stems rise about nine inches high, one-half of which is composed of flowers. They are produced in close whorls, of a fine bright blue, and in profusion. It merits a place in every flower garden.

CHEIRANTHUS OCHROLEUCA. A spreading plant, the floral stems rising about six inches high. The flowers are produced in profusion in short spikes, in the manner of a wallflower; they are of bright lemon

colour. It merits a place in every flower garden. Where an edging for a flower bed is required at this season of the year, these two plants are well adapted for the purpose.

SAXIFRAGRA GRANULATA PLENO.—A spreading plant. The floral stems rise about nine inches, bearing fine heads of pure white, *double* flowers. It is alike pretty in patches on the borders, in pots, or on a rock work. Blooms in profusion.

GEUM INTERMEDIUM. The floral stems rise to a foot or more high. The flowers are of a rich golden yellow, each blossom in form like those of a *Potentilla*, about two inches across. It is very handsome, blooming freely.

VALERIANA CLEOREA.—A spreading bushy dwarf plant. The floral stems rise about a foot high, and the blossoms are borne in fine branchy heads, when in bud of a bright pink, and white when expanded. It blooms profusely, very neat and pretty,

POLEMONIUM RICHARDSONII.—A spreading, compact plant, with pretty tansy-like foliage. The floral stems rise a foot or more high. The blossoms are larger than those of the *P. reptans*, of a lighter blue, and in profusion.

VIOLA CUCULLATA.—A vigorous, bushy plant. The flowers are produced on stalks ten inches long, of a rich blue-purple, with a white eye. Each blossom is an inch and a half across.

PÆONIA TENUIFOLIA FLORE-PLENO.—The foliage is very neat, somewhat fennel-like, but more compact. The floral stems rise about fifteen inches high, each bearing a large *and very double* flower, of a rich crimson colour. It merits a place in every flower garden, being very pretty.

AJUGA REPTANS VARIEGATED.—A very pretty plant. It blooms as freely as the wild species, and its numerous spikes of fine blue flowers in contrast with the green and yellow variegation of the leaves is singularly handsome. It is a spreading bushy plant, the floral stems about six inches high.

THE DOUBLE BLOSSOMED PRIMROSE.

BY ELIZABETH RECTORY, NEAR REIGATE, SURREY.

FOR many years these pretty lowly spring ornaments have been pets of mine, and rank high in my estimation; as also do the single flowered of both our fields and gardens, and I fully enter into the spirit of our poets when they pay extra honours to these sweet flowers.

The poems of Clare are as thickly strewn with Primroses, as are some of the woods near to my residence, which are carpeted by them. The two following passages are from the *Village Minstrel*.—

“ Oh! who can speak his joys when spring’s young morn
From wood and pasture open’d on his view;
When tender green buds blush upon the thorn,
And the first primrose dips its leaves in dew ?

" And while he pluck'd the primrose in its pride,
 He ponder'd o'er its bloom 'tween joy and pain ;
 And a rude sonnet in its praise he tried,
 Where Nature's simple way the aid of art supplied."

In another poem, after describing the village children rambling over the fields in search of flowers, he continues :—

" I did the same in April time,
 And spoilt the daisy's earliest prime ;
 Robbed every Primrose-root I met,
 And oft-times got the root to set ;
 And joyful home each nosegay bore,
 And felt—as I shall feel no more."

The following *double* kinds form my present collection, amounting to about one hundred plants :—Double crimson, white, purple, straw colour, rose, deep yellow, pink, buff, lilac, and red,—each being very double and most distinct. I am fully assured if the entire of them were seen when in bloom in my flower garden, as presented to view from the breakfast-room, in a sunny spring morning, they would not fail to please every lover of flowers.

I grow them in *pots*, as it admits of affording them more readily the *necessary protection in winter*, and because the delicacy and beauty of their flowers render it desirable that they may be placed in a position where these qualities may be duly appreciated and admired. I plunge the pots, covering them with soil, in the various positions in my flower-beds, so as to give the finest effect in contrast of colours. The most particular points in their culture are, first, the soil in which they are planted ; and secondly, the situation afforded them during the summer. The soil in which they appear to thrive most permanently should be composed of equal parts of sandy turfy loam, and well reduced leaf mould, to which a portion of sharp sand may advantageously be added. This should be prepared some time before it is required, and frequently turned over and well blended together : the situation which they absolutely require in summer is a cool border, where they may receive the morning sun before it becomes powerful, but be protected from it during the hottest part of the day ; in such a situation they should be planted out in spring, as soon as they have done flowering, in the prepared soil already recommended. Water during dry weather should be copiously administered in the evening, or after the heat of the sun is somewhat declined, continuing it as circumstances may appear desirable, until the summer growth of the plants is evidently matured. About the latter end of September they should be carefully taken up, and potted into *wide shallow pots*, of sufficient size not to cramp the roots, using the compost already recommended : the only further care they require is, to place them in a cold frame, where they will be just protected from frost, keeping them comparatively dry, and carefully watching that snails and slugs do not eat off the flower buds as they advance. It is scarcely necessary to say that light should, as much as

possible, be admitted, never keeping the frame covered in the day, except during very severe frosts, and taking care to allow a free circulation of air in mild weather.

I have a quantity of pots, whilst the plants are in bloom, in my sitting-room, where they flourish beautifully, and give a sweet cheerfulness to it. I also possess about a dozen pretty kinds of the single flowered, which adorn a border in the pleasure ground.

CULTURE OF DAPHNE ODORA.

BY A NOBLEMAN'S GARDENER IN HERTS.

OBSERVING that one of your numerous subscribers requests to be informed of the best method of cultivating that much admired plant, the *Daphne odora*, and as it is now the blooming season with that deservedly esteemed plant, I should advise your correspondent to pot the plant in *peat and sandy loam*, or equal portions of peat and loam, with a little sand added, taking care first to drain the pot with plenty of drainage, that the plant may not get water-logged, which is very injurious to it. Particular care is requisite too not to let it get dry, for if it does, it often proves fatal to the scented flowers. I would advise keeping it in a heat of about 55 to 56 degrees, which is quite warm enough. The plant should stand in a window where it can get plenty of air. If your correspondent has not any greenhouse or stove, it is very injurious to plunge it in as a shrub in a conservatory or in any ground, as it keeps it too wet.

Care should be taken not to *over pot* the plant, as it seems to thrive best if rather under potted. If your correspondent follows this treatment, it will, I have no doubt, be attended with complete success. With such attention we now have a splendid plant, blooming at every young shoot.

FANCY PELARGONIUMS, AND CAPE PELARGONIUMS FOR BEDDING PURPOSES.

BY A NOBLEMAN'S FLOWER GARDENER IN STAFFORDSHIRE.

HAVING very extensive flower gardens under my care, I am under the necessity of providing as great a variety of plants as possible to fill upwards of two hundred flower beds, and a quantity of vases, &c. I have therefore had recourse to try all likely plants for bedding purposes. We had an immense stock of the scarlet geraniums (so called); I therefore tried every *Fancy* and *Cape* geranium I could procure in order to ascertain which would bloom freely and prove sufficiently showy for a bed, either an entire bed, or in a bed of mixed kinds: and the result has been, by a proper course of treatment, these sections of Pelargoniums are most charming bedders, and the singular varied Fern-like foliage of some, with the pretty sweet lemon-scented and others of that

class, as well as that of the general show class of *Fancies*, and the *Dia-dematum* family, produce a very good effect, and contrast, with the large-leaved scarlet class. The flowers too are so very different from the scarlet class, both in forms and colours, that they create a very pleasing interest in the flower garden.

In order to assist in promoting the general culture of this class of plants for bedding purposes, I beg to offer a few remarks for their proper management:—

In the first place the plants must be *duly prepared*, for if this is not attended to especially the sweet-scented-leaved kinds, they will not be found to bloom so profusely and continuously, as they otherwise would be.

The first requisite, then, is to stop the leads of the shoots late in the spring, so as to prevent their blooming until they are planted in the open ground: for if you turn out plants which have been blooming for some time in the greenhouse or pit frame, with the expectation that they will continue in bloom for any length of time, or with regularity, you will be much disappointed; but turn out young free-growing healthy plants into good soil, and they will realize every expectation. These kinds of Pelargoniums also require *good ground*, that is, it should be well *drained*, and the soil should be rich and open. If not naturally so, add leaf-mould and gritty sand to the soil, or take out the old soil to the depth of 18 inches, and replace with prepared compost of loam, leaf-mould, and sand. Through the summer, especially if the weather be dry, water the *bed* occasionally with weak manure water, observing however, at the same time, not to induce *very luxuriant* growth, or rather *growth* at the expense of flowers. The beds must be rather *closely* filled at first, so that they may soon form a compact mass, and not be seen as stragglers, by standing at a distance from each other. In this latter way the beds are quite unsightly, but *well filled* at first they composé an object of beauty and admiration.

The following are excellent sorts for bedding, blooming freely, showy, and having neat foliage.

FANCY CLASS. *Delicata*,—beautiful blush-lilac with a bright spot on upper petals: a profuse bloomer. *Annette*,—white with rose spots: an abundant bloomer. *Lady Flora Hastings*,—white with large dark spots on upper petals. *Statiaskii*,—rich dark crimson velvet, with a light centre, and light margin: free bloomer. *Carlotta Grisi*,—violet and crimson: profuse bloomer. *Floribunda*,—white with bright rosy crimson on all the petals: an abundant bloomer. *Triumphant*,—a bright crimson, with white centre: a profuse bloomer. *Perfection*,—bright rose with white edging: an abundant bloomer. *Pilot*,—white, with a dark spot on the middle of each petal: a profuse bloomer. *Modesta*,—with large blotches of bright rose, and a white margin: an abundant bloomer. *Gaiety*,—a rich mulberry, with a white margin: most profuse bloomer. *Belle Marie*,—a rich velvet, edged with crimson: an abundant bloomer. *Queen, Superb*,—white with bright pinks free bloomer. *Cleopatra*,—white with a rich blotch on each petal: a profuse bloomer.

SWEET SCENTED LEAVED.—*Citriodorum majus*,—very fragrant, white with dark spot. *Citriodorum purpureum*, *C. violaceum*, and *C. roseum*: bloom freely, and are pretty. Prince of Orange,—neat habit, white with dark spot on upper petals: free bloomer, and continues all the summer. *Odora punctata*,—top petals narrow, lower ones rose, each petal having a crimson spot: free bloomer. *Odora variegata*,—its white and green foliage add to its beauty in contrast with the flowers. Prince of Orange variegata,—this is a very pretty, green and white leaved variety: it contrasts very admirably with the green leaved one. Fair Emily,—it has a smallish oak-leaf like foliage, green with black veins: the flowers are rosy-blush with a crimson spot on upper petals, and a profuse bloomer. Fair Helen,—oak-leaf, flower white with rosy crimson spot on upper petals: it must not have too rich a soil.

HYBRID VARIETIES, and SUNDRY SPECIES.—*Diadematum Sidonium*,—rosy-pink and crimson: very free bloomer and large flower. *D. Sidonium variegatum*,—leaves green with a cream-coloured margin: flowers rosy-purple. *D. Addisonii*—deep scarlet: fine. *D. Bijou*,—top petals rosy carmine with a purple spot, lower ones with violet veins: centre of blossom white. *D. Splendidum*,—orange-carmine ground with large crimson blotches, and white centre. *D. Coquette*,—bright cherry, with fine dark spot: centre white, tinged with violet. *D. Sidonium floribundum*,—similar to the original: blooming freely. *D. Spinii*,—a bright shaded rose and pink. All the above are beautiful, and form charming beds, having large flowers. *Macbeth*,—much like *Purple Unique* in appearance: flowers rich violet purple with white spots: free bloomer. *Moore's Victory*,—pretty foliage: flowers a rich scarlet with velvet spots: soil not to be too rich, but half fresh turfy loam and leaf mould, with white sand and a good drainage. *Quercifolium—superbum*,—pretty oak-leaf, white with rosy-red spots: blooms profusely. *Dandy*,—a very dwarf bushy plant, with neat, green, small leaves; makes a neat edging about six inches high.

VARIEGATED LEAVED.—*Dandy variegata*,—leaves green with white margin: a pretty plant for edging, or in a vase. *Lady Plymouth*,—leaves in form of the old Otter of Rose, scented, green and white: very beautiful, and forms a neat dwarf plant. *Lateripes variegata*, or striped ivy-leaf,—green with white stripes: flowers white.

I omit the variegated kinds of the Horse-shoe *Geranium* Class, (so called). These are known, and have long been in use for bedding. My object is to give the description of the others not generally known, to succeed well as bedders. The description of the best of the *Cape Class* I leave for next month's number.

THE EPACRIS.

By MR. JAMES MURRAY, GARDENER, NEATH HOUSE, NORTH BRITAIN.

AMONGST the great improvements by raising hybrid plants, which has been realized during the last ten years, I think none have exceeded that which have been effected (with *hard-wooded* plants) in

the genus *Epacris*. But a few years ago, we had a *very limited number*, and now we possess, in species and varieties, upwards of one hundred. In the nursery establishment, where I served seven years, and but recently left, we had ninety-three different kinds, and, since my return into Great Britain, I find several other sorts, a valuable acquisition to our greenhouses, some of them in bloom during all the year, but especially are they ornamental during the *winter* when flowers are doubly valuable and interesting. In spring and the early part of summer they rank with the gayest, and though much improvement has been effected, I think it is far from completed.

There is now wanting a number of rich and brilliant-coloured flowers in the way of *impressa*. No doubt most of the readers know this lovely white blossomed plant with spikes of white flowers an extraordinary length. Now if we can obtain, and that can be done, some varieties with scarlet, orange, crimson, and purple blossoms, it will well repay for the attention. Besides some of the *light-coloured* summer flowering being impregnated with the brilliant rich coloured usually blooming in the winter and spring, we might have a number of splendid varieties for *summer ornament*. By impregnating the white and pale coloured ones of the *E. campanulata* and *E. hyacinthiflora* with the high-coloured ones, we should be certain to have improved-coloured varieties of those lovely *bell-shaped* flowers. A great deal can be done in improvements, and I hope some of our amateur plant growers, who *have* spare time to attend to it, whilst practical gardeners in general have not, will turn their attention to the matter. To accomplish everything desired in this respect will be a work of time, but we possess the materials, and the attention would be the most interesting that an amateur plant-grower could undertake. Of all the pleasing parts of gardening, that of raising seedling varieties is the most exciting, for, from the time the seed becomes a tiny plant, until it arrives at blooming maturity, there is constant change; at one time you think it will be like this, at another like that, and, as the day approaches for the opening of the first blossom, the excitement becomes more intense, and "hopes" which are buoyed up to-day, become "fears" to-morrow, while the *finale* will frequently show that those plants upon which we had pinned our faith are valueless, and that some apparently worthless "wee thing," will prove the real California after all. One cardinal point in cross-breeding must never be lost sight of, and that is to improve the *constitution* of the plant at the same time that you improve the *flower*.

In treatment, the *Epacris* require much the same as Heaths, that is, a *good free open peaty soil* with plenty of grit and sand, liberal treatment during the growing season, and well ripening in the autumn to ensure bloom. In potting give *plenty of drainage*, reduce the soil into a tolerable fine broken state, and pot the plants *firmly*. The best place for the plants after potting is a tolerably close frame, but here they must have *abundance of air* when they get established. When selecting plants, take care that they are strong, bushy, and well rooted, with the roots in a fresh vigorous state. Such plants may receive a liberal shift,

but, if they are at all stunted, a small shift will be preferable. Such kinds as *impressa*, *campanulata*, *miniata*, &c., require to be *closely cut in after blooming*, so as to get young vigorous wood from the centre, and this, if it is intended for blooming, should be allowed to grow at full length; but, on the *first formation of a young specimen*, the shoots *must be stopped* to form a bushy plant; and hence bloom must be sacrificed for a season. When the plants are thoroughly established, to ensure their blooming properly they must be exposed to the full sun from the beginning of July until September; in fact, they should be placed in an open part of the garden where both sun and air can act upon them on all sides. Thus treated, such kinds as *grandiflora* and *miniata* may be made to bloom regularly; and the more thoroughly the wood is matured, the brighter is the colour of the flowers likely to be.

The following are the best kinds I have seen in bloom since my return home in visiting the Royal Gardens and principal nurseries. They ought to be grown in every greenhouse:—

Epacris mucronata, bell-shaped, snowy white, in heads.

E. coccinea, tube one inch long, rich deep scarlet.

E. albida, tube one inch, bell-shaped, pure white.

E. hyacinthiflora, three parts of an inch, bell-shaped, a beautiful rosy-blush; superb.

E. alba-compacta, one inch long, wide tube, pure white; fine.

E. alba-campanulata-rosea, half an inch, bell-shaped, beautiful rose; superb.

E. campanulata-rubra, size and form of last, but of rosy-red colour.

E. limatis, one inch, bright pink, with white tip.

E. sanguinea, one inch, deep blood-red; fine.

E. nivea, half an inch, bell-shaped, white; pretty.

E. variabilis, half an inch, bell-shaped, a beautiful pink.

E. rubra grandiflora, half an inch, bell-shaped, in bud bright red, pretty pink when open.

E. ternatus, one inch, pretty pink, with white tip.

E. impressa, nearly one inch, a beautiful flesh-colour; neat and pretty.

E. miniata splendens, bright orange scarlet, pure white end.

E. autumnalis, one inch, vivid crimson; showy.

E. microphylla, white, in very long spikes; neat and pretty.

REMARKS ON EPIPHYLLUMS, CEREUS, ETC.

BY MR. JAMES SAWARD, NORTH BRITAIN.

THE culture of the Cactus order of plants I find divides into two or three distinct methods of treatment. For *Cereus grandifloras*, *C. serpentinus*, and their allies, the rafters of a stove, and not the back wall (most frequently their station), is the most suitable trellis, where they can extend to a proper size to flower, and can have the full benefit of sun and air. The different species of *Epiphyllum*, *Cereus speciosissimus*, and others of the order most nearly allied in habit, require a richer

compost, more water, and an autumn ripening out of doors. The melon shaped Cacti want an airy situation, and every ray of sunshine our climate is capable of affording them. They all require thorough drainage great attention in watering, full exposure to light, and a hot and dry exposure, to ripen and fit them for flowering.

A good mellow loam, white sand, and potshreds broken small, are the principal requisites for a compost for most of the Cactus Tribe, of plants, and manure of any kind must be sparingly used, except for the Epiphyllums, and other *free* growing and flowering sorts. But even with them perhaps an occasional watering with liquid manure would be preferable, as any crude manure in the compost would be liable to retain moisture too long, and retard their ripening in the autumn. A sufficient drainage of potshreds to secure the plants against the least chance of damp, and allow water to pass freely through, is of the first importance, and, broken small and mixed with the compost, is of great use to the Melocacti and all the smaller species. Another point not sufficiently attended to is, to be very careful not to overpot even the strongest growing sorts. In fact, this is the besitting sin of many gardeners with almost every description of plant.

When the Epiphyllums have done flowering, well thin out the least promising of the old and young wood, pot them into a good loamy compost, with less sand and more manure than for any of the other species, and set them into a moderately warm house until they begin to grow freely. An airy but warm greenhouse will soon be the fittest place for them, as, if kept too close, no wood of any strength will be produced. As soon as they arrive near their strongest growth, reduce their allowance of water gradually, and when they feel firm and have nearly done growing, put them out in a hot place, exposed to as much sun and air as possible, but protected from wet. They will not shrivel for a long time, and those that do will be generally found to be deficient of a proper supply of roots, and not properly ripened. Plants thus managed will be found to flower well, and can be forced or retarded so as to produce their flowers for a considerable length of time.

TREATMENT OF SPARAXISES.

MR ROSIER, AMATEUR FLORIST, OF TERRINGTON, IN HEREFORDSHIRE.

THE Sparaxis and Ixias are great favourites of mine, many of both families I grow, with a success which I have not seen equalled elsewhere, and I am certain if the readers hereof who do not at present cultivate these beautiful and showey blooming plants, did but see my display when in full bloom, comprising flowers of almost every hue, their cultivation would soon become far more general, and especially when the bulbs can be obtained at so cheap a rate from Jersey and Guernsey; also being so easy to manage and requiring but a very trifling attention.

For the present I shall direct attention to the treatment required

with the Sparaxises, and scarcely any thing is handsomer than their gay, expanded blossoms are, arrayed in golden, scarlet, velvet, white, rose, green, pink, red, purple, and crimson colours.

In our own country the greater part of the kinds I find will grow well in a south border, planted about six inches deep, within two or three inches of the wall; or at the front of a greenhouse, conservatory, stove, &c. The soil should be a sandy vegetable mould, as the frost is likely to affect the bulbs in winter. When planted in such a situation, however, a covering of dry leaves, sprinkled over with soil, that they may not be blown away, is found beneficial. When so cultivated, they bloom much more vigorously than when grown in pots, and continue to bloom from May to August. I have seen them in some instances push flower-spikes to the height of three feet; and in Guernsey I have been informed they have attained even four feet.

When they are cultivated in pots, the compost should be formed of a mixture of sandy loam, decayed leaves, and peat-soil, in equal proportions. The pots should have a very free drainage.

The time of planting is October, the bulbs being inserted an inch deep; immediately after they should be placed in a cool frame, as they only require protection from frost, till the pots are well filled with roots, when they may be set on the shelves of the greenhouse, and properly attended with water, &c.

When they have done flowering, water should gradually be withheld, the pots be placed where they will be kept dry, till the proper season for repotting, when the balls of earth being carefully broken, the bulbs can be dressed without sustaining injury. By keeping the bulbs undisturbed in the pots as they had grown, they retain their firmness much better than if disturbed, and flower more vigorously than when disturbed as soon as the foliage decays.

I find them readily increased by offsets or seeds. The former may be taken off at the time of repotting. Seed should be sown early in spring, in order to allow time to obtain good sized bulbs previously to autumn.

The varieties have been greatly increased by hybridizing, within the last twelve years, and many very beautiful kinds been obtained. I have eighty six beautiful kinds, nearly all of my own raising. It has especially been attended to by cultivators of flowers in Guernsey, and any attention paid has been more than repaid by the valuable productions they have obtained.

ADVANTAGES OF DEPRIVING PLANTS OF THE SOFT WOODEN CLASS OF THEIR EARLY FLOWER-BUDS.

By MR. JAMES SMITH, GARDENER, AT WESTBROOK HOUSE, YORKSHIRE.

In an article on the double Chinese Primroses, I expressed a probability of resuming my remarks on the above subject, to which you were pleased to invite me. In now reverting thereto, I must disclaim any pretensions to reducing such operations to a rule, and content

myself by an endeavour to awaken an inquiry that may add another link to the chain of culture, by which many flowering plants may be brought to exceed even their present excellence. In my treatment of the above plants it was my aim to *retard the production of flowers* until the plant shall have *attained a luxuriance of growth* sufficient to support the most ample display of blossom. In order to effect this in any flowering plant, it will be necessary to check too early flowering by immediately removing every flower-bud that may appear until the greatest expansion of foliage be ensured. I fear this is too often neglected by amateurs, to whom only these remarks are addressed; and the penalty of early pubescence is defective bloom, if not total abortiveness. Permit me here to repeat the words of Mr. Joseph Hayward. It is remarked by Mr. Hayward, that "the leaves form the excretory organs of plants and trees, and whether the supply of food be great or small, a plant or tree cannot attain, nor sustain itself in, a perfect state of fructification until it is furnished with a surface of leaves duly proportioned to the sap supplied by the roots." This axiom is so good, so essential to a high state of culture, and so desirable to be borne in mind by the horticulturist, that he should adopt it as his motto. Ample foliage before the production of flowers is the desideratum: let the cultivator then, by the strictest observation, seek the best means of promoting it; he will generally find a vigorous growth adverse to the production of flowers, so long as such a state shall be sustained; but it will act conversely when it shall have reached its maximum; therefore, let him use his best endeavours to promote luxuriance until the plant shall have attained its standard of perfection; but if, during its progress there should be any disposition to dilate the incipient flower-bud let it be removed, and, if it be not in the nature of the plant to reproduce blossom-buds the same season, it will be better to lose a year than to have a premature and puny blossom; one plant well cultivated is worth any number badly grown. Some cultivators, in order to to effect a lofty growth, lop away all the under branches, so as to force the sap upwards. Better that the plant be allowed to follow, as far as may be, its natural habit, removing only such shoots as appear stunted or misplaced; this will give girth to the stem, and preserve a more perfect symmetry. I will here instance the Fuchsia. If the taller sorts be so treated, and regularly stripped of their flower-buds, until they have made their desired growth, they may be made to attain their greatest altitude with a pyramidal form, sustaining themselves without any support, their bottom branches sweeping the ground, the others rising branch over branch; when clothed with their bright, crimson, pendulous blossoms, they present a picture of floral beauty. Many are the plants that present a stunted or straggling appearance that, by like treatment, might be caused to assume the same symmetry. The Dahlia, too, might, I think, be much improved in the quality of its blossom, whether for the border or as a show flower, if, instead of the unsparing lopping away of its branches, these were carefully preserved, and the *blossom-buds* more fully displayed; this is

borne out by the *Chrysanthemum* and many other plants, from which, in order to produce fine blooms, we remove most of the flower-buds, while we scrupulously preserve every particle of foliage. I shall pass from this *Leviathan of flowers* to the more modest but equally well-known Mignonette. How to produce the tree is, I believe, generally understood; but as it will exemplify the subject, I will merely glance at the practise of depriving its leading shoot of its flower-bud; it is again surmounted by another shoot, from which the flower is again displaced; the same routine goes on till the plant has reached the prescribed height, when it is allowed to shoot freely, and is clothed with its fragrant bloom. By a very similar treatment, the *Verbenas* may be made either to spread with greater luxuriance on the ground, to trail over the vase, or to climb the trellis; for any of these purposes we have only to persevere in removing the flower-buds, from time to time as they are produced, and new shoots will be emitted, elongating to a considerable extent, at the same time multiplying in number so as to cover a much greater space. If these be allowed to fall negligently over a vase, or be carefully entwined round a trellis, attached to a flower-pot, the effect will be in either case exceedingly ornamental. The *Anagallis*, *Petunia*, *Heliotrope*, and various other plants, if subjected to a like training are capable of the same effect. The *Heliotrope* I once saw trained round a pillow in a greenhouse 12 feet high, clothed with flowers from nearly the bottom to the top. *Thunbergias*, *Maurandias*, *Rhodochitons*, and the whole race of dwarf climbers, will be much improved in growth by removing, as soon as visible, the early flower-buds. If the *Balsam* be allowed to expand its first flush of flower-buds, the blossoms will neither be so large or so double as they will if the early buds be plucked off. This will create a more luxuriant development of the plant, and the succeeding buds will be produced all over the plant in the greatest abundance, covering it with a profusion of double flowers, very superior to what would have been the effect if the plant had been allowed to expand its blossom while yet in its infant state. The *Schizanthus* and most annuals may be much improved by removing the first flower-buds. The cultivator will be amply repaid by sowing them (annuals) early in August, pinching off any flowers that may be produced the same year, and thus transferring them to the biennial list. *Lobelias*, particularly *Cardinalis*, *fulgens*, *ignea* and others of that section, by having the centre shoot pinched out, will produce a number of laterals, clothed with elegant flowers for nearly their whole length, instead of one long and almost flowerless stem. *Pentstemon gentianoides* and others, *Campanula pyramidalis*, and a variety of the like plants, are subject to the same remark. The *Erysimum Peroffskianum* is a striking instance of this treatment; if left to flower its centre shoot, although the novel color, under any treatment, renders it pretty, it will, nevertheless, have a straggling appearance; but let this be pinched out, and the consequent radiation of shoots will display a dense patch of rich and dazzling flowers. Many bulbs, as *Hyacinths*, *Tulips*, &c., after having

been grown in rooms, in glasses and flower-pots, are reduced to a state of great degeneracy; if these be planted in the free soil, and deprived of the languid flowers that will be produced the succeeding year, the bulbs will be invigorated, and thus prepared to flower well every alternate year, so long as this treatment be continued. To enumerate all the flowering plants that might be improved by a judicious removal of the early flower-buds would be a recapitulation of nearly the whole vocabulary of plants. Thus having redeemed my promise and responded to your invitation, I trust I have said enough to induce inquiry, and feel assured that investigation will lead to a more general practice of depriving plants of their premature flower-buds.

BIENNIAL AND ANNUAL STOCKS.

BY MR. CHARLES WALKER, OF MANCHESTER

THESE flowers rank among the most lovely of our flower gardens, and are universal favourites; but by some they are not aristocratic enough to be generally placed, now-a-days, amongst our bedding plants. I am therefore induced to forward a few particulars on the history and cultivation, the family of Stocks,—hoping, by calling attention to the flower, to promote a more general interest in growing them.

The kind commonly called the Queen's Stock—gilliflower, in French *Giroflee des jardins* (Garden Stock) varies now to almost every colour. From white we go on to flesh, pink, scarlet, purple, red, and crimson, besides a variety that has *variegated* blossoms. The seed should be sown towards the end of May, and the best plan is to sow two in each small pot; keep the soil just moist, and if two plants are raised, as soon as properly established, pull (or cut) one of them out, and keep the plants in a somewhat shady place, so that you do not have them too vigorous that year. In the *cold parts* of our country shelter them in a frame during winter, and turn them into the open ground about the first week in March, giving attention to watering. The soil the seed should be sown in must be poor, to prevent them becoming too robust before winter; but when planted out, have about equal portions of old well-rotted dung and good fresh loam, added to the same quantity of the soil of your garden. Water at the roots freely during the spring and summer. They usually bloom from the beginning of May, and continue through the summer. A succession of young plants may be raised, and, by keeping some in a cooler place, their growth will be retarded, so that a stock in bloom up to November can be had. A sowing, of course, must be made every successive May, and thus provide for every following year's bloom. I have a plentiful supply of liquid manure, and once a-week I give my plants a good watering at the roots, after they are planted out in the open ground.

The Brompton Stock—in French, *giroflee a tige*—and the White Stock are varieties of this kind; the latter will sometimes live three or four years. This species is a native of the coast of Spain, Greece, Italy

Candia, and the isles adjacent. It requires the same treatment as above. There is a noble stock, called the *Giant* and *Emperor*, which is of the *Biennial* section. I treat it too same as the *Queen Stock*, and *Brompton's*, and have grown it with a *spike of flowers* two feet six inches long, and the blossoms as large as a crown piece, and of a full double. There is too a most charming stock which is brought in pots, in bloom, to Covent-garden, in London, called the *Intermediate*, said to have been raised between the *Ten Week* and the *Giant*. It is a dwarfish grower, very branching and a profuse bloomer: the flowers of a bright rosy-red. I have had for several years a packet of seed sent as that variety, but it has not come true. I am told the London market gardeners will not allow seed to be disposed of. It is sown and treated as the biennial stocks are, and preserved in winter in frames near the glass.

The Stock-gilliflower has been long established in the English gardens, and is indeed a native of the cliffs by the sea-side. The old English name of Gilliflower, which is now almost lost in the prefix, *Stock*, is corrupted from the French *giroflie*. Chaucer writes it *Gylofre*, but, by associating it with the nutmeg and other spices, appears to mean the clove tree, which is, in fact, the proper signification of that word.

Turner calls it *Gelover* and *Gelyfloure*; Gerarde and Parkinson, *Gilloflower*. Thus, having wandered from its original orthography, it was corrupted into *July-flower*. Pinks and carnations have also the title of Gilliflower from smelling like the clove, for which the French name is *girofle*. For distinction, therefore, they were called *Clove-gilliflowers*, and these *Stock-gilliflowers*. Gerarde adds the names *Castle-gilliflower*, and *Guernsey-violet*.

The broad-leaved shrubby-stock is a native of the island of Madera; it blossoms from March to May. When the flowers first open, they are white, sometimes inclining to yellow; in a few days they become purple; hence this species has been termed *mutabilis*, or changeable. This is of quick growth, and may be increased by cuttings, taken as soon as the plant has done flowering: they should be housed in the winter.

Some persons increase the *Queen's-stock* in the same manner, planting the cuttings in March or April, in pots three or four inches wide; in the middle of May they remove them into pots five or six inches diameter, and in July or August into full-sized ones, that is, eight or ten inches; but though these cuttings will generally root, they do not make such handsome plants as those raised from seed; it is not, therefore, worth while to practice this method unless to preserve some fine double flowers. These flowers love the sun; but care must be taken to supply in the evening the moisture which has been exhausted during the day. It will be observed, too, as an invariable rule, always to place a plant in the shade when newly potted, and to let it remain there till rooted, for if once much flaged, they do not readily recover.

There are other species of stock, but the above are the most desirable. There is a *Cheiranthus* called the *C. quadrangulus*, a native of Siberia, which was introduced into the Paris garden by Jean Jacques Rousseau.

The flowers are a fine sulphur colour, and very sweet. It thrives in the open air, but does not last many years.

Garciasso speaks of them as worn in the hair :

“ Loosely flow her golden locks;
If she stays them 'tis with jasmines,
Chains them, 'tis with pinks and stocks.”

In this country ladies seldom adorn themselves with natural flowers. and yet we have many that would bloom through an evening very well. The introduction of such a fashion might be an important advantage to the fair sex : should the rooms be very warm, and likely to injure the beauty of their floral ornaments, and cause them to droop prematurely, they would be compelled, like Cindrella in her fairy dress, to retire at a seasonable hour, before such a catastrophe should take place ; which would be of no small benefit to their health and beauty. In the east ladies commonly wear natural flowers. Thunberg speaks upon the subject with a gallantry quite enthusiastic :

“ The ladies in Batavia,” says he, “ wear neither caps nor hats ; but tie up their hair (which is only anointed with oil, and has no powder in it), in a large knot on the crown of their heads, and adorn it with jewels and wreaths of odoriferous flowers. In the evenings, when the ladies pay visits to each other, they are decorated in a particular manner about the head with a wreath of flowers, of the *Nyctanthes Sambac*, run upon a thread. These flowers are brought every day fresh to town for sale. The smell of them is inconceivably delightful, like that of orange and lemon flowers : the whole house is filled with the fragrant scent, enhancing, if possible, the charms of the ladies' company, and of the society of the fair sex.”

THE ANNUAL, or as they usually called, the Ten Weeks' Stock,—French, *Le quarantain* ; *le violet d'été* (Summer Violet) ; Italian, *leucoio estivo* (Summer Stock). There are now an innumerable host of varieties, of almost every shade of colour, comprising both double and single blossomed. The addition of the German varieties has supplied a most valuable assortment, from white to yellow, scarlet, crimson, to almost black, and the quantity of bloom depends on the course of treatment : for the more vigorous the plants previous to blooming, the more flowers in proportion.

Seeds should be sown in shallow pans, or pots, in February or March, placing them where a little warmth is supplied, or in a gentle hot bed. When strong enough, put two plants into each small-sized sixty pot, or thumb pots, and place them where their growth can be promoted. The plants which are most likely to have *double blossoms* are usually *short*, *round*, and rather *bushy*, and the *single* ones are long and *thin*. They have a fine appearance, whether grown in patches in the mixed collection of a border of plants, or an entire bed of them. The soil in either must be rich with old rotten manure. I have used that of old cow dung, with the greatest success. A dry sub-soil is essential to their doing well ; if not naturally so, it must be

made dry by a few inches deep of brick or lime rubbish being laid at the bottom, upon which the rich compost is to be laid. In like manner should the place be prepared where patches are planted, if the sub-soil be a damp clay or something similar. The *Stocks* are rather like the *Wallflower*, will flourish much better on an old crumbling wall of a tower than in a strong wet soil.

ON DRYING AND PRESERVING SPECIMENS OF FLOWERS, &c.

BY A BOTANIST.

OBSERVING at the present season of the year that there are an abundance of floral specimens, and that information is requested by a correspondent on a successful mode of drying specimens, the following was given me by a friend, which for six years I have adopted with very satisfactory results, and forward it for insertion in the *June Cabinet*. "In selecting specimens for drying, care must be taken that they exhibit the usual character of the species; no imperfect or monstrous shoot should be made use of. If the leaves of different parts of the species vary, as is often the case in herbaceous plants, examples of both should be preserved. The twig should not be more woody than is unavoidable, because of its not lying compactly in the herbarium. If the flower grow from a very large woody part of the trunk as is often the case, as in some *Malpighias*, *Cynometra*, &c., then they should be preserved with a piece of the bark only adhering to them. It is also very important that ripe fruit should accompany the specimen. When the fruit is small, or thin, or capable of compression without injury, a second dried specimen may be added to that exhibiting the flowers; but when it is large and woody, it must be preserved separately. Next to a judicious selection of specimens, it is important to dry them in the best manner. For this purpose various methods have been proposed: some of the simplest and most practicable may be mentioned. If you are in a country where there is much sun heat, it is an excellent plan to place the specimen between the leaves of a sheet of paper, and pour as much dry sand or earth over it as will press every part flat; leave it in the full sunshine, and it will generally dry in a few hours. But in travelling, when conveniences of this kind cannot be had, and in wild uninhabited regions, it is better to have two or more pasteboards of the size of the paper in which your specimens are dried, and some stout cord or leather straps. Having gathered specimens until you are apprehensive of their shrivelling, fill each sheet of paper with as many as it will contain; and having thus formed a good stout bundle, place it between the pasteboards, and compress it with your cord or straps. In the evening, or at the first convenient opportunity, unstrap the package, take a fresh sheet of paper, and make it very dry and hot before the fire: into this sheet so heated, transfer the specimens in the first of the paper in your package; then dry that sheet, and shift into it the specimens lying in the second sheet, and so go on till all your specimens are

shifted; then strap up the package anew, and repeat the operation at every convenient opportunity till the plants are dry. They should then be transferred to fresh paper, tied up rather loosely, and laid by. Should the botanist be stationary, he may dry his paper in the sun; if the number of specimens for preparation is inconsiderable, put them between cushions, in a press resembling a napkin press, lying it in the sun, or before a hot fire. It is extremely important that specimens should be dried quickly, otherwise they are apt to become mouldy and rotten, or black, and to fall in pieces. Notwithstanding all the precautions that can be taken, some plants, such as Orchideæ, will fall in pieces in drying: when this is the case, the fragments are to be carefully preserved, in order to be put together when the specimen is finally glued down. In many cases, particularly those of Coniferae, Ericæ, &c., the leaves may be prevented falling off by plunging the specimen, when newly gathered, for a minute into *boiling* water. The great object in drying a specimen is to preserve its colour, if possible, which is not often the case, and not to press it so flat as to crush any of the parts, because that renders it impossible subsequently to analyse them. When specimens have been thoroughly dried, they should be fastened by strong glue, not gum, nor paste, to half a sheet of good stout white paper: the place where they were found, or the person from whom they were obtained, should be written at the foot of each specimen, and the name at the lowest right hand corner. If any of the flowers or fruits, or seeds, be loose, they should be put into small paper cases, which may be glued in some convenient place to the paper. These cases are extremely useful; and fragments so preserved, being well adopted for subsequent analysis, will often prevent the specimen itself from being pulled in pieces. The best size for the paper appears, by experience, to be $10\frac{3}{4}$ inches by $16\frac{1}{2}$. Linnaeus used a size resembling our foolscap, but it is much too small; and a few employ paper $11\frac{1}{4}$ inches by $18\frac{1}{2}$, but that is larger than is necessary, and much too expensive. In analysing dried specimens, the flowers or fruits should always be softened in boiling water; this renders all the parts pliable, and often restores them to their original position. In arranging specimens when thus prepared, every species of the same genus should be put into a wrapper, formed of a whole sheet of paper, and marked at the lower left corner with the name of the genus. The genera should then be put together, according to their natural orders. To preserve plants against the depredations of insects, by which, especially the little *Anobium castaneum*, they are apt to be much infested, it has been recommended to wash each specimen with a solution of corrosive sublimate, in camphorated spirits of wine; but, independently of this being a doubtful mode of preservation, it is expensive, and in large collections extremely troublesome. I have found that suspending little open bags filled with camphor, in the inside of the doors of my cabinets, is a far more simple and a most effectual protection. It is true that camphor will not drive away the larvæ that may be carried into the herbarium in fresh specimens; but the moment they become perfect insects, they quit the cases without leaving any eggs behind them."



FLORAL

OPERATIONS FOR THE MONTH

IN THE FLOWER GARDEN.

THE recent weather has been so variable, that it has been hazardous to attempt putting out bedding plants, but we hope danger from frost need not be apprehended, and as early as possible the planting should be completed; in many cases shading for a few days will be essential to success.

We have frequently called the attention of our young readers to the desirability of paying strict attention to the judicious arrangements of flowering plants, as regards height and harmony of colouring. It is true that, of late years, this subject has become a matter of study amongst gardeners, and great changes for the better have taken place in this respect; still we are far from supposing that we have arrived at perfection. Always bear in mind—if beauty, order, and effect are desired—that attention to this, next to a well laid-out flower garden, is essential to their full development. In producing well-arranged contrasts, the different shades of colour must be as distinct from each other as possible: for instance, white should never be placed in contact with yellow, or deep blue with crimson; but white forms a good contrast with blue or red, blue to orange, yellow to purple or violet, dark crimson to light blue, and scarlet should be placed near those which have a profuse green foliage, as red and green form the best contrast. Orange and violet do well. Greenish-yellow and rose contrast well.

Attention will now be required to water freely established plants, being careful it does not pass off, and in the *evening* sprinkle over-head newly-planted bedding plants, it tends to promote an early re-establishment. Pinks and Carnations will require due care in securing, and by the middle of the month pipings of Pinks may be taken off, and towards the end layers of some early Carnations be made. Thin away extra flower-buds. Dahlias,—*thin out the shoots*, so as only to retain about four or five. Stop the leading stem, to give support to the side ones. Cuttings will soon strike root. If the weather be dry, water daily, a good supply at once: a portion of mulchy manure, spread over the roots, is very beneficial. Seeds of Sweet Williams, Canterbury Bells, Scabious, &c., should now be sown for next year's blooming. Auricula and Polyanthus must be kept in a shady but airy place. Prepare the compost for re-potting in next month, and sow seed as soon as ripe; also Pansy seed.

NEW FLOWERS.—Let attention be given to hybridising, with a view to obtain improved varieties. Roses: maggots often infest the buds; carefully examine, and destroy. Green-fly, too, stop at first by fumigation, &c. Chrysanthemums: young plants should be prepared. Violets for next year's blooming, attend to beds of, &c. Put off cuttings of Pansies.

IN THE GREENHOUSE, ETC.

The greenhouse plants may now be placed out of doors; let them be duly watered, for if allowed to flag the result is the leaves are damaged. Moss sprinkled between the pots keeps the soil cool.

The house will now have to be kept gay and sweet by Balsams, Globe Amaranthus, Cockscombs, Brachycoma, &c. Re-pot as required, to keep the plants in a growing state. Achimenes will now be coming into bloom; they repay for every attention. Cuttings of nearly all greenhouse plants should now be put off; May and June are the best months for that purpose. Cinerarias are highly

ornamental, and well worth encouraging. Any done blooming and seed collected, if required, should be turned out of the pots entire into a bed of rich soil, where there is shade from eleven to four o'clock. There they will flourish, and supply an increase for next year's bloom. Cuttings of Roses may be put in; and will soon strike. Camellias that have been forwarded by forcing the shoots and buds, should now be placed in a cooler situation, to give vigour to them. When the foliage of Ranunculus or Tulips is quite dead, the roots may be taken up. Pelargoniums, as they go out of bloom, must be prepared for another season.

ERIOCAS.—The early-blooming kinds should be draughted out, and others may follow them as fast as they go out of bloom. Examine the plants very carefully, and see that they are in a proper state as to moisture; and if you are an exhibitor, never put a plant of this or any other kind into a van, without previously giving it a good soaking of water. The young plants which are not blooming had best be placed in a pit where they can be exposed or not, as may appear necessary. Stop such as require it boldly back, and train them so as to form a proper foundation for a good specimen. As the principal specimens go out of bloom they may be removed to a shady situation to make their growth, being previously cut in, if necessary. Supports for an awning must be placed over them, so that in case of heavy storms or continued rain, they can be protected a little. Clear weak manure-water may be used occasionally for the free-growing kinds. With regard to ventilation, there is no fear of your over-doing it after this time. Re-pot any requiring it, but do not over-pot; the one-shift system is injurious to nearly all the tribe, the only exceptions are those of rapid growth and robust habit. Rough peat and silver sand, with bits of stone, &c., and a liberal drainage are requisite. Epacris, &c., should also be duly attended to in re-potting, &c.

AZALAS in the forcing pit must be kept shaded during bright sunshine, and a moist growing atmosphere must be maintained around them. Water freely with weak guano-water, and sprinkle the vacant parts of the house or pit daily, but not upon the bloom. As the plants go out of flower, place them in heat, to perfect their wood for next year's blooming. Camellias promote the well ripening of the wood, before fully exposing them to the open air. The supply of next season's bloom depends on *this attention now*.

THE PERPETUAL OR TREE CARNATION.

The appearance of a few plants of this charming flower at the exhibition of the Horticultural Society at Chiswick on Saturday last, reminds me that a few remarks respecting it at this season may possibly prove useful. This variety is commonly called the Winter-flowering Carnation, from the desirable characteristic it possesses of blooming throughout that season. The name of Tree Carnation may be familiar to some, as the plant itself is not of recent introduction, although very few varieties seem originally to have been known, and those have now been entirely superseded by sorts lately imported; for it is our continental neighbours who have been so successful in raising them, and to whom we are principally indebted for these invaluable acquisitions; for not only are the varieties now more diversified in colour, but their growth and habit are altogether improved. In addition to their bright and varied colours, they are deliciously fragrant, a desideratum which cannot be too highly appreciated, some of the varieties being equal in perfume to the common Clove. Persons desirous of cultivating this tribe of Carnation should procure nice young plants, say in March, and keep them in a cool frame until the weather permits them to be exposed entirely to the open air; but even in spring the lights should be taken off whenever it is practicable. Those who have old plants should strike cuttings about the middle of March, as young plants grow rapidly throughout the summer, and make by far the best specimens for winter blooming. Before taking cuttings, the plants should be put into a warm house, or one that is kept rather close; and those who have not this convenience should put them in the warmest part of the greenhouse; if this is done, the plants are excited to grow, and if the cuttings are then taken off, they will strike root more readily. Care should be taken to strike only from vigorous plants, and to select strong and healthy cut-

tings; for if this is not done, and the cuttings are taken from delicate and cankerly plants, the colours of some of the varieties are inclined to run, besides which, the plants always maintain a sickly appearance. Tree Carnations will supply an abundance of cuttings, as most of the varieties continually throw out a profusion of laterals, which can be taken off at any season without injury to the parent plant; indeed, taking a few of them off in autumn has rather a tendency to strengthen the flowering shoots than otherwise. To insure cuttings taking root, either late in autumn or in spring, they must be struck in a little heat, but the cutting pots should not be covered with a glass, for if this is done, the cuttings will fog or damp off; besides which it is not necessary; and if no glass be used, they will want occasionally looking over, and any grass carefully removed that is likely to create damp. After the cuttings are well rooted they should be potted singly into, say, 4-inch pots, and kept in a rather close and moist atmosphere until fully established, when they should be gradually hardened off in a cool frame. At this stage the tops may be pinched out, which will greatly assist the formation of nice plants. To those who have not the convenience of supplying warmth for striking cuttings during winter, I should recommend their being struck at the latter end of summer, to be potted off and kept in a cool frame during the winter, care being taken to keep them rather dry—a rule which should always be observed in wintering Carnations. The cutting pots should be prepared by first giving a good drainage of any sherds of a porous nature, then a few rough pieces of turfy loam to prevent the soil from being carried through the sherds; after this, take equal proportions of loam and silver sand, mix together, and fill until within a quarter of an inch of the rim, then complete by filling up with silver sand. Tree Carnations will thrive luxuriantly in a good maiden soil or loam mixed with a little silver sand, to which may be added a slight sprinkling of leaf-mould; the same soil may be used throughout the season, except when the plants are first shifted from the store pot, when a little more silver sand should be used. In spring the plants should be removed from the frame, and placed upon an open border, in any favourable situation; but first prepare it by spreading a thin layer of ashes, which will prevent worms from entering the pots. If at this time the plants require potting, a shift should be given them, but care must be taken not to over-pot them. I find that many varieties thrive better if gradually shifted into their blooming pots, say first from 3-inch into a 6-inch pot, and so on in proportion. The plants are comparatively no trouble during summer; they merely want watering, and sometimes stirring up the surface soil; but as they grow, care must be taken to secure the stems nicely with some neat sticks. The principal insects that attack them are green fly, which is easily removed by sprinkling with a little tobacco-water. If the weather and situation prove excessively hot in the summer, the plants may be removed with advantage to a border that is slightly shaded from the mid-day sun. If the above mode of treatment is followed, by the autumn the plants will have thrown up from three to eight stems each, and be laden with a profusion of buds, which, if the plants are removed to a greenhouse as soon as the weather is beginning to get damp and cold, will expand, and afford a continuance of blossoms throughout the winter. These Carnations are not only valuable for their display in the greenhouse, but are, I may say, unequalled as a winter flower for the bouquet and other purposes to which cut flowers are applied.—W. B. *Gardener's Chronicle*.

ON FORCING ROSES.—It is generally asserted that Roses do not succeed, if forced, two years successively. This I find from practical experience to be an erroneous opinion, as I have forced the same plants five consecutive seasons. They have been treated as any other potted plant would be, namely, shifted as they increased in size; and this year they have bloomed more profusely than they did the first season: in fact, they have annually improved in the number and beauty of their blossoms. My collection consists of Moss, Spongy, Cabbage, Unique, Wellington (Hybrid China), Crimson Perpetual, and Smith's Yellow Noisette, which succeeds much better as a forced than as a garden Rose. I am induced to mention these circumstances respecting forced Roses, from the failure which I perceive in that department in many gardens where there is every facility for procuring them; and there is no flower so highly appreciated, even by non-amateurs, as a forced Rose.

Rosa.

7



1. *Gium. magnificum*
2. *Papaver nudicaule aurantia*



"'Tis sweet to muse upon His skill display'd
 (Infinite skill) in all that He hath made!
 To trace in Nature's most minute design
 The signature and stamp of power Divine;
 To wonder at a thousand insect forms,
 These hatch'd and those resuscitated worms—
 New life ordain'd and brighter scenes to share,
 Once prone on earth, now buoyant upon air."—COWPER.

"Oh, come to the river's rim, come to us (flowers) there,
 For the white water-lily is wondrous fair;
 The swan among flowers! how stately ride
 Her snow-white leaves on the rippling tide!
 And the dragon-fly gallantly stays to sip
 A kiss of dew from her goblet's lip—
 Oh, come in the glow
 Of the long summer's day,
 When the cool waves flow
 And the zephyrs play.
 Oh, dwell not in cities, mid dark and care,
 But come to the river's rim, come to us there!"

ILLUSTRATIONS.

GEUM MAGNIFICUM, PAPAVER NUDICAULE-AURANTIA.

GEUM MAGNIFICUM.—This is a splendid variety of *G. chilense*, and is very much superior to a previous variety, raised from the same species, and named *G. coccineum*. The present one is a hardy perennial herbaceous plant, blooming in profusion, the flowering stems rising from a foot to eighteen inches high. The flowers being large, and of such an intense colour, produce a brilliant appearance, and render the plant deserving a place in every flower garden, where it would be one of its most superb summer ornaments. It belongs to the same natural order as the *Potentillas*, but is a much more compact and neat plant than any of that genus we are acquainted with.

PAPAYER NUDICAULE, AURANTIA.—This *very handsome variety* of Poppy is a hardy herbaceous *perennial*, the flowering stems rising a foot high, and blooming *very freely*. It forms a neat bushy plant, and deserves a place in every flower garden. Its *very neat shaped* blossoms, of a brilliant orange colour, render it very attractive, and one of the prettiest flower garden *summer ornaments*, of its size.

NOTES ON NEW OR RARE PLANTS.

DRACENA ELLIPTICA; VARIETY MACPLATA.—It is a stove plant from the East Indies. The leaves vary in size from three to nine inches long, *leathery*, elliptic shaped, of a deep green, beautifully spotted with yellow dots. The flowers are produced in terminal branching panicles, of a yellow-green colour. Each blossom about an inch across, having six narrow petals. Its spotted leaves render it a pretty acquisition. It recently bloomed in the Royal Gardens at Kew. The plant is also in Mr. Van Houtte's establishment. (Figured in *Bot. Mag.*, 4787.)

CÆLOGYNE TESTACEA. CLAY COLOURED.—A native of Singapore, obtained by Messrs. Loddiges, in whose collection of stove orchids it has been some years. The flowers are produced in drooping racemes of six to eight blossoms in each. They are of a dull clayey-white colour, with the *lip* spotted with brown. (Figured in *Bot. Mag.*, 4785.)

CEREUS MACDONALDIE.—This very noble flowering plant was sent from Honduras to the Royal Gardens at Kew, by Mrs. Macdonald. The flowers, when fully open, are about ten inches across. The long outside sepals are of a rich orange colour. The *petals* are broad, white, and the centre handsomely ornamented with orange-coloured stigma and anthers. It merits a place in every stove. (Figured in *Flore des Serras*, 896.)

HEXACENTRIS MYSOBENSIS; VARIETY LUTEA.—A plant of this superb flowering variety was recently exhibited at Chiswick, by Messrs. Veitch. It is a *climbing shrub*, having large leaves, and its large rich blossoms are produced in terminal drooping racemes. Each blossom has four broad lobed divisions, and the flower is three inches across. Many of our readers have seen the fine species *H. coccinea* in bloom, and deservedly admired the beauty of its flowers; but this *yellow* variety far exceeds them in size, brightness of colour, and in the number of blossoms borne by each raceme. (Figured in *Bot. Mag.*, 4786.)

ILEX CORNUTA.—This magnificent species was introduced into England from China, by Mr. Fortune. The leaves are five inches long, and the end of each has three long horn-like spines. The berries are very large, of brilliant red colour. (Figured in *Flore des Serras*, 893.)

SCUTELLARIA VILLOSA.—A stove plant from Peru. The flowers are of a brilliant scarlet, tube-shaped, one inch long, produced in a terminal raceme, forming almost a *corymbose* head of twenty or more blossoms. They are produced numerously. The leaves are green, with the underside of a rich purple. Very handsome. (Figured in *Bot. Mag.*, 4789.)

FRANCISCA EXIMIA.—It was discovered in the neighbourhood of Villa Franca, in Brazil, by M. Libon, and was introduced to Brussels by M. de Jonghe. It is an erect growing branchy stove shrub, which blooms very freely in the early part of the year; but if plants be rested, and introduced into heat at various periods, some may be had in bloom all the year. The flowers are of a beautiful violet-purple colour at first, but fade so as to become white. Each blossom is as large as a penny-piece, and being borne in profusion, are very showy. In winter and spring it is a charming ornament. (Figured in *Bot. Mag.*, 4790.)

RHODODENDRON CINNABARINUM; VARIETY PALIDUM.—Another of the Sikkim-Himalayan plants, which has bloomed in the Royal Gardens at Kew. The following remarks are made in the "Botanical Magazine," where a figure of it was given in the June number:—"Now we have in cultivation in the Royal Gardens at Kew what Dr. Hooker considers a third variety, with leaves, in shape resembling those of the original type of *R. cinnabarinum*, but pale coloured beneath, with a calix resembling that of the *R. Roylei*, and corollas paler than either of the other varieties, and having the faux above sprinkled with dark blood-coloured dots. The flowers are produced in terminal cymes, of a full rose colour, between funnel and bell shaped. Each blossom is about an inch and a half across. (Figured in *Bot. Mag.*, 4788.)

BRILLANTALISIA OWARIENSIS. A *Salvia*-like plant, having large heart-shaped leaves, and the flowers are produced in terminal panicles of twenty or more blossoms on each. The flowers have a rosy purple tube, with the lower spreading portion of the Labium a rich violet-blue. It bloomed first, in this country, at the Chelsea Botanic Garden. It is a native of Sierre Leone, and requires similar treatment to the *Salvia fulgens*, and others of that character.

GESNERIA DONCKELAARIANA. In a previous number we noticed this fine plant. We are informed that it originated in the Botanic Garden at Gaud, and was considered by the Director (M. Donckelaar) to be an hybrid, produced between *Gesneria discolor* and the *Ligeria rubra*. (Form of *Gloxinia speciosa*.) Other persons suppose it to be a distinct species which had been introduced along with other Gesnerias, and been sent under the name of some other previously known species, but proved to be the fine flowering plant it is. The leaves are very large, heart shaped, green above and purple beneath. The flowers are produced in a large terminal panicle, and each blossom of a well-formed *Gloxinia* shape, tubular portion an inch and a half long, and the front of the blossom (limb) an inch and a half across. The inside of the flower is white; the floral stems are of crimson red colour. It merits a place in every stove. (Figured in *Flores des Serres*, 902.)

BEGONIA ZANTHINA. The leaves are very large, eight inches or upwards across, of a dark green above and light red beneath. The flowers are of a bright golden yellow colour; very handsome. It merits a place in every stove.

BEGONIA ZANTHINA GANDAVENSIS. The flowers are yellow, and the leaves particularly handsome. The upper side a very deep green,

richly tinged with maroon, and underneath a deep purple. It is a superb variety.

BEGONIA ZANTHINA MARMOREA. The plant is of robust habit, with fine velvet green foliage; most beautifully marbled with *varnished silvery white*, equally as handsome as the leaves of *Cissus discolor*. This very handsome variety had the premier prize awarded for it at the Grand Exhibition, held in May, at Paris, and at Mons, on June 4th of the present year. The above handsome varieties are in M. Van Houtte's collection, and plants may now be obtained.

Plants in bloom in the Royal Gardens at Kew.

SCHEERIA MEXICANA. (Synonyme *Achimenes Chirita*.) This is a charming plant. It is branchy, growing from half a yard to two feet high, and blooming profusely. The flowers are in form like those of the neatest *Gloxinia*, and each about three inches across the front of it, of a rich violet purple, with a white throat. It merits a place in every stove.

ACHIMENES LONGIFLORA MAJOR. The flowers are of similar form to those of *A. longiflora*, but one-half larger, being three inches and a half across, and of a lighter blue colour. It is exceedingly showy, and ought to be grown in every collection of this fine flowering genus.

HOYA BELLA. A plant was trained round a trellis composed of six sticks, inserted at equal distances inside a 48 sized pot, and around this the plant was coiled, which had a number of its very handsome waxy white heads of flowers, and produced a pretty effect.

GLOXINIA IMPERIALIS. The outside of the flower is a French white. The mouth has a rim of bright blue, and farther on, inside the tubular portion, it is of a dark velvet colour.

Geranium sanguineum Lancastriense. A hardy border plant, of prostrate habit, blooming very freely, and the flowers of a beautiful flesh colour. It contrasts prettily with the purplish red of the *G. sanguineum*, and blooms all the summer.

Datura cornigera. This species is of medium habit, and from two to five feet high; form branchy, somewhat *bushy* plants, which bloom very freely. The flowers are in form similar to those of *D. arborea* (*Brugmansia suaveolens*), drooping, white, about six inches long. It flourishes in the green-house, or open ground in summer.

Gloxinia Prince de Ligne. Outside of flower a fine rosy red, inside deep maroon; with a rim of bright crimson round the throat, and blossom very large.

Gloxinia Gay Lussac. White, with a primrose stripe inside the tube, edged with carmine; very neat.

Gloxinia Albert Courtier. Outside lilac, inside a dark velvet. Flower very large and superb.

Gloxinia Madame Chartin. White, with a yellow stripe up inside, edged with rosy red; very neat.

Gloxinia marginata. White outside, inside blue, with a white rim round the front of the flower. It is of thick substance and fine form.

HARDY HERBACEOUS PLANTS.—*Dodecatheon media elegans*. The flower stems rise half a yard high, each bearing a terminal head of from twenty to thirty blossoms, of a fine rosy purple, with a yellow centre, and very handsome.

Gem chilense. Flowers bright scarlet, one inch across—pretty.

Potentilla argyrostigma insignis. The flower stems rise eighteen inches high, blooms in profusion, each blossom one inch across, *white*, handsome cup-shaped—very pretty; forms a nice contrast with the brilliant coloured kinds.

P. Ruthenica. The plant spreads so as to form a dense bush of foliage, six inches high. The flower stems are a foot high; it blooms in profusion, each blossom nearly an inch across, of a deep yellow, and very pretty.

P. intermedia. It spreads like the last described, and the foliage at the outer edge of the bush forms an exact circle. The flowers are borne in vast *profusion*, bright yellow; very neat and pretty.

Galega orientalis. Grows three feet high, neat plant, blooms freely, in spikes of six inches long; the flowers are blue; pretty.

Silene maritima. A prostrate, spreading, bushy plant. Each flower one inch across, white, with black anthers, in profusion; neat and pretty.

Nepeta Massinæ. A spreading bushy plant, the very long spikes of lilac-coloured flowers rise to a foot high. It blooms in profusion, and pretty.

Lathyrus rotundifolius. Now three feet high, in very profuse bloom. Its pretty pea flowers are of a rosy purple, with a deep crimson keel.

Cerastium tomentosum. This is an old inhabitant, introduced in 1648. Many of our readers know it; its *silvery* white prostrate spreading stems and leaves, with its *snowy-white* starry flowers are familiar to them. When grown as well, at Kew, with its profuse mass of flowers, it is exceedingly neat.

Iberis tenoreana. This candy tuft-like perennial species forms a neat evergreen bushy plant, about nine inches high, blooming profusely. The flowers are white, tinged with lilac; very neat and pretty.

Aquilegia fragrans. This fragrant columbine grows two feet high; its flowers are *large*, white with the outside tinged with lilac; very pretty.

Statice maritima-rosea. A handsome thrift, the flower stems one foot high, with a large globular head of very bright rose-coloured flowers; exceedingly pretty.

Campanula Barclayana. Grows two feet high, a neat bushy plant, having narrow foliage, and blooming in vast profusion. The bell-shaped flowers are drooping, similar to the common wild campanula of our country, each blossom an inch long, and the same across the mouth; a beautiful violet-blue. It merits a place in every garden.

C. Sarmatica. It grows two feet high, and has numerous floral stems, each terminating in a long spike of *lavender*-coloured flowers; each blossom is two inches and a half long and two across, borne in *profusion*.

C. latifolia. A robust compact plant, growing three to four feet high, each of its numerous stems having about two feet long adorned with large bell-shaped flowers, each blossom being two and a half inches long and as much across, of a fine purple-blue colour; very fine.

C. Macrantha. Similar in stature to the last species, each bell-formed blossom three inches long, a violet-blue colour; very pretty.

Geum intermedium. Grows eighteen inches high, and blooms profusely; each blossom is *cup* shaped, an inch and a half across, of a rich golden-yellow colour; very pretty.

Delphinium Wheelerii. The principal stems rise four feet high; one-half the length is composed of numerous spikes, densely furnished, of azure-blue flowers. It is exceedingly fine; no other species or variety we have seen have near so many blossoms. It merits a place in every garden.

Orobis lathyroides. A neat plant, eighteen inches high, bushy, blooming in profusion. The pea-like flowers are borne in racemes of twenty or more in each, of a pretty lilac-blue; neat and handsome.

Veronica latifolia. A neat bushy plant, two feet high, pushing forth numerous flower stems, and each stem terminates with *four spikes* (six inches long), of ultramarine blue flowers. It is exceedingly showy and neat, well meriting a place in every flower garden.

Veronica austriaca. A neat bushy plant, one foot high, having numerous flower stems, bearing a *profusion* of flowers, which are borne in spikes, bright blue with a white eye; very neat and pretty.

Potentilla reptans. A creeping plant, growing rapidly, and blooming profusely; the flower stems rise about four inches high; the blossoms are of a bright yellow, *double*, an inch across; very neat and pretty.

Campanula persicifolia-maxima. A neat growing plant, three feet high, pushing forth numerous stems. Half a yard of each is adorned with very large *rich bright blue* flowers; each blossom, broad bell-shaped, is about three inches across. It is a very superb variety.

REMARKS ON THE SLEEP OF PLANTS.

BY MR. PETER MAKENZIE, OF WEST PLANK, STIRLING, N.B.

I READ with pleasure the interesting article headed "Observations upon the Sleep of Plants." This is a subject which has engaged the attention of the learned and unlearned, less or more, for many years; and although the causes of the phenomena may still remain a secret, something useful may yet be obtained when the study of the subject is closely pursued. In Professor Balfour's "Manual of Botany," it is said to be of importance, both as regards meteorology and botanical geography, that observations should be made carefully on what are called the *annual and diurnal periods of plant*, the former being the space of time computed between two successive returns of the leaves, the flowers, and the fruits; and the latter the return of the hour of the day at which certain species of flowers open. The same species should be selected in different localities, and care should be taken that

the plants are such as have determinate periods of flowering. Rules as to the mode of observing periodical phenomena in plants have been drawn up by the British Association, and a committee has been appointed to carry this into effect. The committee has published—First, a list of plants to be observed for the period of foliation and defoliation. Second, a list of plants to be noticed for flowering and ripening of the fruit. Third, a list of plants to be observed at the vernal and autumnal equinoxes and summer solstice, for the hours of opening and closing their flowers. I am not aware whether the observations of the committee have been made public or not, neither do I know whether a watch of Flora has been constructed in any part of Britain; but perhaps the following, by Linnæus for Upsal, and Decandolle for Paris, may be interesting to some:—

Name of Plant.	Upsal.	Paris.
<i>Convolvulus nil</i> , and <i>sepium</i>		3— 4 a.m.
<i>Tragopogon pratense</i>	3— 5 a.m.	4— 5 a.m.
Other cichoraceous plants	4— 5 a.m.	4— 5 a.m.
<i>Matricaria suaveolens</i>		4— 5 a.m.
<i>Crepis tectorum</i>	4— 5 a.m.	
<i>Papaver nudicaule</i>	5 a.m.	5 a.m.
<i>Momordica elaterium</i>		5— 6 a.m.
<i>Lapsana communis</i>	5— 6 a.m.	5— 6 a.m.
<i>Hypocharis maculata</i>	6 a.m.	6 a.m.
<i>Senecio</i> , different species	6— 7 a.m.	6— 7 a.m.
<i>Nuphar</i> and <i>Nymphaea</i>	7 a.m.	7 a.m.
<i>Calendula pluvialis</i>	7 a.m.	7 a.m.
<i>Anagallis arvensis</i>	8 a.m.	8 a.m.
<i>Dianthus prolifex</i>	8 a.m.	
<i>Nolana prostrata</i>		8— 9 a.m.
<i>Hieracium chondrilloides</i>	9 a.m.	
<i>Arenaria</i>	9—10 a.m.	
<i>Mesembryanthemum crystallinum</i>	9—10 a.m.	9—10 a.m.
<i>Portulaca sativa</i>		11 a.m.
Most ficoideous plants		12 a.m.
<i>Scilla pomeridiana</i>		2— p.m.
<i>Mirabilis jalapa</i>	5 p.m.	6— 7 p.m.
<i>Cereus grandiflorus</i>	9—10 p.m.	7— 8 p.m.
<i>Convolvulus purpureus</i>		10 p.m.

The flowers of the Chinese tree peony appear to be under the same influence as many other flowers. I put in a plant of it, upwards of twenty years ago, when it was about a foot high; it is now between six and seven feet high, and ten feet in diameter, with upwards of one hundred and fifty blossoms and flower-buds upon it. Some of the flowers will measure nearly a foot across when the sun is bright; again, in dull weather they contract, and will scarcely measure six inches across.

We are told by those who have studied the subject, that the expansions and closings of flowers are regulated by light and moisture, and also

by a certain law of periodicity. A plant accustomed to flower in daylight at a certain time, will continue to expand its flowers at the wonted period, even when kept in a dark room. Decandolle made a series of experiments on the flowering of plants kept in darkness, and in a cellar lighted by lamps. He found that the law of periodicity continued to operate for a considerable time; and that in artificial light some flowers opened, while others, such as species of *convolvulus*, still followed the clock hours in their opening and closing.

THE EUPHORBIA JACQUINIFLORA.

BY MR. WILLIAM MASON, GARDENER, ELAM HALL, LEEDS.

I NOTICE the frequent recommendations of this very pretty flowering plant, and, aware that it requires particular attention to prevent it becoming weakly and a long straggling subject, I forward a few hints of the plan to be pursued, so as to have nice *bushy* plants, and to have an *abundant* bloom. The latter will not be realised unless the young wood be *well ripened*.

It will flourish in the following compost:—turfy loam and turfy peat—having been obtained and laid in a heap for several months—and well-rotted leaf mould, in equal parts, to which give a good sprinkling of white sand and bits of charcoal, or broken pot; also have a liberal drainage.

After blooming, the plants must be placed in a warm *greenhouse*, and allow the soil to become gradually dry; soon after, whilst in this dormant state, cut back the branches. When the buds *begin* to push forth for new shoots, re-pot the plants, carefully reducing the ball of earth, &c. After potting, place them in a plant stove, or hot-bed frame, where *the roots* will be warm, which will promote a vigorous growth of new wood; but if the plant has only *top* heat, the shoots are more weakly in proportion. When the young shoots are about five or six inches long, tie their ends in a bending form, in order to check the sap and to strengthen the lower part of each shoot. In a fortnight or three weeks' time, pinch off the end of all such, and promote the well maturing of the wood left. Do not *stop* any shoots after July, but all shoots that appear before this time must be stopped, as often as they get so long; but, by the end of September, place the plants in the greenhouse, lessen the supply of water, so as to be in a dryish state, and, early in November, remove to the stove, and a profusion of bloom will soon push forth; and, by having a few plants to bring in at following times, a succession of bloom through winter, spring, and early summer, may be obtained. It is one of the most lovely blooming plants we have. It requires frequent syringing overhead, and particularly at the underside of the leaves, to keep it free from the attacks of the red spider; and, to have *bushy* plants, attend to the bending and stopping of the shoots,

THE BEAUTY OF OUR NATIVE WILD FLOWERS.

BY SENEX.

FLOWERS, of all the works of the Almighty Creator, are the sweetest; they are all most beautiful. Cold and insensible indeed must be the heart that loves them not. But it is the wild flowers of the hedge and the field that I would make a few observations on. Those plants indigenous to Great Britain are a most interesting race, a few species of which have come under cultivation, and seldom have they failed to produce new beauties for the admirers of Flora. There is the little *Bellis perennis*, parent of numerous pretty varieties, and still capable of further improvement. And the *Viola tricolor*, with its endless attractive genus; the Pansy alone has made many a florist rejoice to see his little seedling expand and discover to him a variety distinct from any others. And the parents of these are not more elegant than many other species—I may name the *Veronica*, *Campanula*, &c.; for though the botanist may have them recorded, and may possess specimens of them, yet until the florist renders them *domesticated*, their real nature and quality are virtually unknown. Search, then, the forest and the field, for I am persuaded with the poet, that

“Many a flower is born to blush unseen,
And waste its fragrance on the desert air”—

for even entirely new species may be found; but those already known would suffice, and many of them, under attentive management, might bid fair to rival even the Pansy in the floral world: and it is a matter of great congratulation that many societies are endeavouring to promote the discovery of new species, by awarding premiums for collections, single specimens, &c. If they were likewise to encourage the cultivation of known species merely for the production of new varieties, or with a view of getting some given species in the highest state of perfection, they would be serving equally the purpose for which such societies are established. And even should an amateur florist transplant some of the most beautiful indigenous tribes into his own garden, and treat them with care and attention, I venture to predict success to his undertaking. For my own part, I have (this spring) devoted a piece of ground to their culture, and tried the different effects of various soils on each of them; and should the result be in any way serviceable, I shall have great pleasure in communicating it. Are the race of wild flowers to be cast away, however beautiful, because they are natives of our own country? It seems so; for do we not see any puny exotic extolled to the skies, while the more splendid hedgeflower is left neglected in its native place? Let the exotic flower in the artificial climate of the stove or greenhouse, and I admire them; but more, much more do I admire those flowers to which are linked a train of sweet recollections of childhood's days, when we roved over the green fields among cowslips, butter-cups, and daisies. But some will say this is prejudice;

if the exotic is to remain in its own place with only a share of attention, why not confine the wild flower to its wilderness? but I would not have you make a field or a hedge-row of your gardens; I would only have experiments tried aiming at advantage to floriculture and the general good.

SEEDLING ORANGE TREES.

BY A DEVONIAN GARDENER.

THE collections of Orange trees in this country of the large-growing section is very far from proving as successful, as I am confident, may be realised. I speak from the fact of what I have often seen exhibited with the same kinds of trees in their natural climates. During the last twelve years I have turned my attention to forming and cultivating a collection in Devonshire, and grow them in a light-house, glazed (now) with Hartley's rough sheet-glass, and the best results have been obtained. I observe that Orange trees in general, either grafted or budded, come *sooner* to a bearing state, but are never such healthy trees as seedlings. I find I can bring a seedling Orange tree into bearing in six years. I have observed the young seedling trees to put out thorns at the base of the leaf; and so long as these appear on the young wood no fruit can be looked for. As the tree is in a luxuriant state, my method to stop that vigorous growth is this:—Mix half strong brown loam, half peat or heath earth, mixed well together, with a little gravel, to keep the soil from binding to the roots; have pots proportionable to the size of the tree, put them into this soil, which I consider rather poor, but keeps them in good health, and in humble growth; by this management they come sooner to a bearing state. I keep them in that soil till I see blossom appearing, which may be looked for when no thorns push out of the young wood; after that I give them larger pots, then take compost half strong brown loam, half vegetable mould, break some bones small, mix some in the compost, and put some in the bottom of the pots, which feeds the roots a great length of time, and drains off superabundant water. After the fruit is set, I have observed the decaying flowers to be in a corrupt state at the base of the fruit, and cause it to drop off; when the fruit is set, I take all the decaying flowers carefully off. In pruning Orange trees, great care must be taken not to shorten any young wood, as the flower generally appears at the extremity, only cutting out any cross useless wood. I have known some hew down their Orange trees every year. By this treatment it is impossible for their trees to bear fruit, for in spring they bring forth strong thorny wood, and are no nearer bearing than when one year old. The brown scale is very troublesome to Orange trees and retards their growth, and makes them have a sickly unhealthy look; if the trees are not kept clean of that insect, little good can be expected where they are. I keep my trees perfectly clear of that insect with three dressings

in one year, by taking soft soap half a pound, flour of sulphur a quarter of a pound, nux vomica half an ounce, add to these six quarts of hot water, keep stirring till the soap is dissolved; when cold, take a sponge and wash every leaf on the upper and under sides; three days after I find the insects all dead. I take the engine and throw pure water all over them, which washes all clean off; the trees look healthy and keep clean for about three months. The temperature of an Orange-house should not exceed fifty or fifty-five degrees in winter. In summer I give the trees frequent artificial dews, by throwing water over them with the engine, which, I think, causes the fruit to be thinner in the skin than it would be in a dry heat; the watering greatly adds also to the health and beauty of the trees.

TO BLOOM THE ERYTHRINA CRISTA GALLI THREE TIMES IN ONE SEASON.

BY MR. WILLIAM LEACH, BRAMPTON HALL, LANCASHIRE.

In my routine of visiting gardens I have often seen large plants of this beautiful exotic with but *a few flowers*; and as by proper management it is capable of bearing a profusion, and that more than once in a season, I send you a few practical hints on a mode of treatment which, if pursued, will realise that object.

First. In propagating this plant, take off young shoots from the mother plant when they are about four inches long. I cut them off with a little of the old bark attached to each; this is done any time from January until May. I plant the young shoots each one in a small pot, with a mixture of loam and sand, and afterwards plunge them into a good brisk heat. Shading and watering is particularly attended to. In three or four weeks the plants will have filled the small pots with roots, when they are shifted into 32-sized pots with their balls entire, using rich strong loam. A good heat, plenty of air and manure—water is necessary until the beginning of October, when I find a lesser quantity wanted. As soon as the foliage has decayed, I cut the plants down to within six inches of the roots, turn them out of the pots, clean the roots, and preserve them in sand kept in boxes. Early in January I pot the roots into 32-sized pots, with the compost as named before, and then plunge them into a hot bed frame or pine pit. The roots soon push out a quantity of shoots, when I allow only four to remain on for flowering (the others may be put into pots as before stated); about the middle of March the plants require re-potting into 24-sized pots, and kept in a good bottom and top heat. These plants will flower very fine in April. Early in January, 1852, I potted a two-year old cutting; in April it was six feet high, and profusely covered with blossoms. In May last I cut it down close to the original stem, and in July it was equally as splendid as it was in April. In August I cut it down again, and flowered it for the third time in October; the plant each time was

six feet high, and was exhibited three times at the Horticultural Show, in the same pot in which it flowered in April. It has been recommended to raise young plants from cuttings taken from the strong shoots when the wood is quite hard, and not from young shoots. I have tried both methods repeatedly, and I can obtain much finer plants in one year from the young shoots, than from the hard wooded cuttings at two years old.

OBSERVATIONS ON RHODODENDRONS AND OTHER AMERICAN PLANTS.

BY MESSRS. WATERER, OF BAGSHOT, NURSERY, SURREY.

AMERICAN PLANTS are every year becoming more popular among all classes, from the humble cottager to the affluent peer. They are generally quite hardy, and suffer no injury from our ordinary winters. They bloom in great profusion during the whole of the summer, and they are withal very easily cultivated; and therefore they are indispensable to every garden, no matter what its extent may be, whether a small plot in front of the parlour window of the modest villa, or the extensive lawn and pleasure grounds of the wealthy manor.

It is only within the last few years that they have received that amount of attention which their great merit, as objects of garden decoration, so justly entitles them to. Their present popularity, however, is such as to inspire confidence that they are at length about to assert their claims to the fullest consideration; and it is very probable that, by the extensive planting of Rhododendrons, and the other magnificent kinds, the gardens of England will, in a few years more, present a gorgeousness and beauty of which it would be quite impossible to form the most remote idea from anything that has yet been achieved in the triumph of modern horticulture.

Though it may be safely affirmed that no class of ornamental plants requires so little attention or skilful management as American Plants, we have deemed it desirable to offer a few practical observations for the guidance of amateurs and others, to whom the treatment of this beautiful tribe may be new, or but little understood.

In thus offering the benefit of our experience, which embraces a period little short of fifty years, we do not think it necessary to extend our remarks so far as to form a complete treatise on the subject; at the same time we believe that no essential or important point will be found to be overlooked or lightly valued.

"American Plants," then, as may be premised, include certain genera, all belonging to the natural order Ericaceæ; the principal species, from which the best varieties have more recently been raised, having been originally introduced from the American continent. They are all more or less beautiful; but the Rhododendrons and Azaleas are especially remarkable for their dazzling colours and the profusion of

their flowers, which, when displayed on a grand scale, as in our London exhibition or in our nursery, present a scene which admits of no parallel. They are all connected by certain and easily recognisable affinities; and therefore, when we speak of soil and general culture, we wish it to be understood that our directions are equally applicable to the whole tribe.

There can be no doubt that, compared with other hardy evergreen flowering shrubs, they present one or two features peculiar to themselves; yet long experience has given us the fullest opportunities of forming an opinion on the point, and we venture to presume that we have some claim to be heard. Let none be discouraged, then, in their first efforts to grow these beautiful plants; for we have no hesitation in asserting that they may be successfully managed with only the exercise of ordinary care and intelligence, without which the most elaborate dissertation, or even specific directions, would be of little or no avail.

The plants of which a tribe or order is composed are characterised by a particular constitution. This remark is especially applicable to those now under consideration. It has long been known that Cape Heaths—forming the type of the order to which American Plants belong—have never been grown in France, Belgium, and many parts of Germany, to the same perfection as in England; and the cause assigned has been chiefly the want of proper peaty soil, without which these beautiful greenhouse and hardy plants will not thrive, however favourable other circumstances may be.

This fact, however, has been frequently urged as an argument against the possibility of growing Rhododendrons, and other genera known as American Plants, except in a certain kind of peaty soil; and it is unfortunate for the tenability of an opposite position, that the objection has derived apparent weight by being associated with isolated cases of failure. Yet nothing can be more erroneous than the supposition that there is any difficulty in supplying them, in almost every locality, with soil sufficiently fertile for all practical purposes.

That some districts are more favoured than others, as respects the composition of soil, cannot for a moment be doubted; and it is perfectly true that a rich, well-pulverized peaty soil is the most preferable for these plants; but we have only to visit such places as Sion, the seat of the Duke of Northumberland; Kenwood, the seat of the Earl of Mansfield; and other famed gardens round London, to perceive that Rhododendrons will grow in any kind of good and fertile soil to great perfection, and that they will even propagate themselves to a wonderful extent, covering large plots of ground in wild luxuriance and beauty, as freely as if growing on the borders of an American forest.

Indeed, there are numerous instances of their thriving well in what is called a light, friable, fertile loam, of which the much-prized peats form but a very insignificant part; and we may safely say that there is no soil in which plants can be grown at all that is not equally suitable for growing Rhododendrons: and no tribe of plants admits so readily of

being removed at almost any season. They can be easily taken out of the ground, even when nearly in flower, and conveyed to any part of the country, without suffering the least injury ; so that a whole garden may be furnished with a mass of bloom with little more than a week's notice, or plants already established may be removed on any emergency, about their flowering time, to positions where they may be required to increase the effect or add to the display, either into large pots near the house or planted out.

In confirmation of this statement, it may be sufficient to remark that the plants which compose our London exhibition are every year removed from our nursery about the middle of May, and carried to the Regent's Park, a distance of thirty miles. These facts, we think, speak for themselves, and clearly prove that of all ornamental flowering plants none are so easily grown as the subjects of our present notice.

But, though American Plants are not so strictly exclusive in their predilections as may have been supposed, it should not be forgotten that a rich peaty soil is that which most accords with their natural constitution. Yet it is scarcely necessary to state that this soil may be found more or less plentiful in every county in England. Peat, it must be remembered, is composed of certain vegetable substances which have undergone a long and slow process of decay. These substances are chiefly the softer portions of trees, or leaves, nuts, tender twigs or branches, and other *debris* generally abounding the forests. When it is desired, therefore, to provide a good substitute for peat, nothing will be found more suitable than "leaf mould," or rotten leaves mixed with a portion of light sandy soil. Another mode of meeting the want of good bog is to prepare a compost in the following manner :—Collect several loads of what is called the top or surface spit of any plantation, wood, or even grass field ; and the more this surface is impregnated with decayed vegetable particles the better. The thickness of the spit will depend, of course, on circumstances, being more or less according to its composition. When a supply has been obtained, it should be thrown together ; then carefully and freely mixed with leaf-mould, or old and well-rotted dung from a melon frame. In this operation the turfy parts should not be chopped fine, but preserved as rough and large as is compatible with the mixture of the whole mass. When the plants are to be planted in beds, or compartments of more irregular outline, the average depth may be stated at about twenty inches. To this depth the soil should be taken out, and an equivalent portion of the compost already described placed in its stead. At the time of planting, should the weather be very dry, nothing is of greater importance than a copious supply of water. This injunction is the most urgent during the first season ; for after they are fairly established there is, comparatively speaking, but little to be apprehended. In very dry seasons, however, every precaution should be observed to prevent the balls of earth round the roots from becoming too dry—an evil to which they are liable in elevated positions.

We may just state, in conclusion, that we merely offer these directions

respecting soil for the benefit of those who may have ready access to a plentiful supply of leaf-mould and the other ingredients of a rich compost; but we beg to repeat that American Plants will grow in any ordinary garden soil, and therefore all who are desirous of having a display of their beautiful flowers need never be deterred from attempting to grow them from a fear of failure and disappointment.

There is only one point which we think it worth while to notice here—that is, the importance of plucking off the decayed blooms after the plants have done flowering, as this operation is beneficial to their growth, and induces a greater abundance of flower-buds for the following season.

The following are a selection of the newest and best hardy Rhododendrons, which begin to bloom generally about the *first week in June*, and are, therefore, secure from injury by frost.

Atrosanguineum, dark crimson, a very fine variety.

Attraction, fine rosy crimson, excellent habit.

Beauty of Bury Hill, bright crimson, fine large truss of flowers.

Blandyanum, rosy crimson with black spots, very large truss, and robust plant.

Blatteum, purple tinged with crimson, immense truss.

Coccineum mirabile, intense glowing crimson, very fine.

Delicatissimum, light pink, bright carmine spots.

Estandard de Flandre, purple and black spots.

Floribundum coccineum, a very bright crimson, intensely spotted.

John Waterer, an intense glowing carmine, flowers very large and magnificent; it does not bloom till about the 18th of June.

Lady Eleanor Cathcart, transparent vermilion rose, with dark crimson spots, very fine.

Leopardi, rosy purple; the entire blossoms are covered with crimson spots, and truss very large; superb.

Maculatum nigrum, dark purple, intensely spotted.

Mortonianum, rosy crimson, white throat, and black spots; fine.

Mrs. John Waterer, clear bright rosy crimson, immense truss; superb.

Nobleanum bicolor, fine light rose, with distinct white spot; fine.

Rhodoleucops, beautiful rose, with a distinct white blotch.

Roseum superbum, rosy pink, bright carmine spots; one of the best.

The Black Prince, nearly black, distinct, and very fine.

Towardianum, rosy lilac, immense truss; fine form.

Unicum, bright rose, with fine crimson marking.

Vandycke, large and rich crimson flowers of first-rate excellence.

Lady Wenlock, bright crimson nicely spotted, and the truss is *cone-shaped*; fine.

Omphale, rosy crimson, strongly marked with black spots.

The following sorts, which are seedlings raised from the noble species *R. catawbiense*, are recommended for general purposes, near walks in woods, or among shrubs of larger growth, on sloping banks near carriage drives, &c.

- Catawbiense bicolor, rose with white throat.
 Album elegans, very fine pure white, large blossoms and truss.
 Delicatissimum, white beautifully tinged with pink; first rate.
 Everestianum, lilac and rose spotted with brown, immense truss, and abundant bloomer.
 Maculosum, pearly white, with orange centre.
 Hyacinthiflorum, rosy purple, very double.
 Nivaticum, clear white, and distinct yellow eye.
 Pictum, white, with a shining orange blotch.
 Melanthaumum, very dark purple tinged with red.
 Lindsayanum, fine rosy crimson with black spots.
 Fastuosum pleno, semi-double rich purple.
 Enchantress, fine white with yellow eyes.

MANAGEMENT OF GLOXINIAS, IN ORDER TO GROW AND BLOOM THEM SUCCESSFULLY IN A GREENHOUSE.

BY THE FOREMAN IN A NOBLEMAN'S GARDEN ESTABLISHMENT, NEAR WOBURN, IN BEDFORDSHIRE.

IN a recent number of this magazine, I observed a correspondent solicited information on this subject, I therefore forward particulars of a mode of treatment which I have pursued, and realised all I desired. To cultivate these charming ornaments successfully in a greenhouse, pursue the following simple method of management:—

In the spring, as soon as they *begin to push* out shoots from the bulbs, shake them gently out of the soil, and put them in a rich light compost, well drained with small broken pots—the size of the pots not to exceed one inch more than the diameter of the bulb. Give a gentle watering, and place them in the warmest part of the greenhouse. Be careful not to over-water, until the plants are of a considerable size; they may then be more freely watered, and will require larger pots. I generally flower them in pots six inches wide at top, and eight deep.

When the greenhouse plants are removed into the open air, the internal heat may be increased; the Gloxinias will then grow rapidly, and will require a proportionate increase of water. Occasionally it will be advantageous to give them manure in a state of solution. *Every day sprinkle them gently on the whole herb, as well as the underside of the leaves, with clear soft water*, from a syringe, or the fine rose of a watering pan. This not only tends to keep off insects—the red spider being fond of Gloxinias—but it greatly contributes to promote their vigorous growth. When, on account of frost at the end of summer, it is needful to bring in the greenhouse plants, the sprinkling must be omitted, and the quantity of water given every time reduced, until they are almost dry. Place them on a dry, airy shelf. Clip (not pull) off all decayed leaves as they occur; “*but never suffer the soil to become*

DUST DRY," as, if that be the case, the bulb will become farinaceous, and, when watered in the spring, will rot.

Gloxinia maculata cannot be grown successfully in a greenhouse so as to flower; it is decidedly a *stove plant*, and requires great heat and moisture to bloom it in perfection; but any of the others, belonging to the general section of *Gloxinias*, may be grown, and will flower properly by the above treatment.

THE USE OF TURF ASHES IN THE COMPOST FOR PICOTEEES AND CARNATIONS.

BY A NORTHAMPTONSHIRE FLORIST.

BEING convinced of the utility of the following method, I offer it to your notice for the use of such of your readers as may be disposed to try it. The chief thing in which I differ from most others whose methods of preparing compost I have seen, is the substituting turf ashes for sand. This I find to be much preferable; and I have no doubt it will be found the same by all those who, like me, are obliged to use cow-dung as the principal article in their compost: by cow-dung, I mean the manure formed by the dung and litter thrown from the cow-house, which should be *at least one year old* before it is used. The cold, heavy nature of this manure is corrected by the contrary properties of the ashes. My method is as follows:—"In March or April I take some turf from the best ground I can, considering that the fatter the soil the better will be the ashes. I do not take it more than four inches deep; and as soon as the turfs are in order, I burn them. When I consider that I have a sufficient quantity of ashes, I mix them as hot as possible with my cow-dung and loam. As to the precise quantity, I am not very particular; much depends on the nature of the loam, and a trial or two will easily determine the proportion. Of our red earth, I allow about one part to one part of ashes, and two parts of dung. This compost should be turned and mixed at least once a fortnight in summer, and once in three weeks or a month in winter; for, notwithstanding all that has been said about the winter preparation of soil, I believe one summer to be worth two winters for the purpose. I do not find it necessary to use quick lime in this compost, though, when I used sand, I thought lime indispensable. The wire-worm I have not seen in the compost, as I now use it; yet I am by no means prepared to say that that formidable enemy of the florist will not attack plants growing in it. After twelve months' preparation, it will be fit for use. Turf-ashes are used by other florists, and all I have conversed with on the subject highly approve of it.

ON RAISING NEW VARIETIES OF PLANTS.

BY A PRACTITIONER.

FROM time to time I have noticed in this magazine the conductor thereof encouraging the hybridising of various classes of plants, and

which induced me two years ago, to turn my attention to the process with the Amaryllis, Achimenes, Verbena, Fuschia, Phlox, Pelargonium, Calceolarias, and others. Some of the seeds I obtained early last summer I sowed immediately, and the others early this spring, and now I have, as the result (from the first sown), a very numerous and almost endless variety of beautifully distinct flowers of the above, with the exception of the Amaryllis. The process is easy, applying the pollen of one flower to the stigma of another. The flower to which the pollen is about to be applied must have its own anthers (containing the pollen) cut away before they burst, after which the pollen from the different plant may be applied to the stigma. If the pollen of the plant to be operated upon is not cut away, the stigma is likely to be operated upon by the pollen of the same flower, and the result be natural seedlings. The stigma, when in a proper state to have the pollen (powder-like) applied, is glutinous outside, and the powder adheres to it. I have noticed that no certain criterion can be relied on as to the form the new plant will take; sometimes I find that the male (pollen) plant is assumed, and in others the contrary. I uniformly found that the more perfect in form both parents were, so was the production, as it respects the colours. I have not had two alike from the same plant; when all the flowers on a plant have been operated upon by pollen from one plant, the most decided, strong, and clear colours give the more distinct in the progeny. It is only by observation, in the progress of the operation and blooming, that the best results can be safely expected in future attempts as to colours; but in form, where the flowers of both are of fine form, those raised therefrom will certainly be good. As far as the majority of my one year's experiments go, I find *in colour* the seedlings partake more of the mother plant, and *in form* that of the plant from which the pollen was brought.

The entire process, from first to last, has afforded me much gratification, and those persons fond of flowers will derive pleasure in its pursuit, and the present time is the best for experimenting. The result of but a few years' application to the system of hybridising has already added immense charms to the beauties of the stove greenhouse and flower garden, as well as to fruits; and the process being now carried on in a far more extensive scale, in a few years we shall, no doubt, have quite astonishing results to grace our floral exhibitions, as well as domestic compartments.

REMARKS ON THE CAMELLIA.

BY AN AMATEUR PLANT CULTIVATOR IN MIDDLESEX.

The Camellia is justly esteemed one of the finest, if not actually the finest, of our exotics; and indeed, there are few of the beautiful denizens of the greenhouse and conservatory that can lay equal claim to

our attention. Unlike most of its compeers, this lovely genus, at all seasons, whether it be in blossom or not, excites our admiration. During the summer and early winter months, we are pleased with its bold and elegant form, and with the deep glossy hue of its beautiful foliage; whilst from Christmas to May, the various varieties delight and charm by their beautiful and showy flowers, of white, buff, striped, and red, of every shade, from the deep crimson to the soft tint of the maiden's blush. The Camellia may in truth be called, "the most beautiful of the beautiful;" for what, in the whole range of our exotic flora, is more beautiful than a fine specimen of the Old Double White, having, perhaps, one or two dozens of splendid blossoms, fully expanded? The Old Single Red, *C. japonica*, appears to have been introduced into England, in the year 1739; the Old Double White, in 1792, by Sir John Slater, of the East India House; and the Old Double Red, imported in 1794, by Sir Robert Preston, of Vallyfield; and since that time many fine varieties have been imported from China, and hundreds of seedlings have also been raised in this country and on the Continent within the last few years. After all, I scarcely know one that exceeds in beauty the one called *The Old Double Variegated Red*, beautified as it is with irregular blotches of white. In conversation lately with a very celebrated Camellia cultivator, I observed to him that my plant of the Old Double Red had not so many blotched flowers the last few years as previously; he then gave me the following particular mode of treatment, in order to promote the production of variegated blossoms.

To blotch Camellias plentifully with white, they should be forced pretty freely the preceding spring (after they have done flowering), kept a very little dryer than usual, and *freely exposed to the sun after the young wood has ripened*; indeed, if Camellias be perfectly healthy and sound at the root, and have a plentiful supply of water, they will require no shade at all; it is only when they have been much exposed to the action of frost in the winter that it is required, in which case they should be shaded from the hot May sun till the young shoots are pretty well ripened. It may be taken as a general rule, that if the frost in the winter produces a transparency towards the centre of the leaf, the rays of the spring sun, if suffered to bear upon it, will generally turn the parts brown that have been so affected, and the leaf will drop. Plants, however, that are not in a free state of growth will seldom suffer in this way; four or five years is the average longevity of the Camellia leaf, and with good management it may be kept green and healthy a year or two longer, though we often see the plants, when they have not had due attention, carry but one or two years' foliage; these, except when in bloom, have an unsightly appearance. He added further, "The soil I have found most proper for Camellias depends in a great measure on their age: for seedlings or young cuttings intended for stocks or otherwise, when first potted off, I use good fat bog mould, fresh dug, broken rough with the turf and film adhering, mixed with a little white sand, taking care to have a good drainage by filling the pot about one-fourth with well-shaken turf. I never allow but one piece

of broken pot laid hollow over each hole in the pot ; for, unlike the Erica or Epacris, which delight in *shallow soil with a loose bottom*, the natural abode of the Camellia is in a *deep rich soil* ; consequently, I have always found the roots perish as soon as they get into a handful of small potsherds, which some cultivators put into the bottom of the pot. At the next shifting I mix a little light turfy loam with the peat, and at each successive shift increase the proportion of loam ; and for old plants, I use about an equal quantity of loam and bog mould. And a collection of Camellias may have some in bloom from September till the succeeding May by the following treatment :—Pick out those you wish to blow late of the backwardest plants the latter end of March or beginning of April, before the wood buds have started, and set them out of doors in a sheltered situation ; there let them stand throughout the summer. If not too forward when put out, they will not commence growing until late in the season, and the flower buds will not be formed before autumn ; these, for the most part, if kept in a cool house through the winter, will not bloom before the following April or May. Those required to bloom early in autumn should be placed in March, or as soon as they have done blooming, in a forcing house, and kept in a good heat, plentifully supplied with water, both at the root and over the foliage, by syringing, increasing both heat and light as the young wood ripens ; after which they should be removed back to the conservatory or greenhouse, where they may remain the rest of the summer. The intermediate succession to flower through the winter should be kept constantly in the conservatory, where they should be frequently syringed, and every means used to promote a healthy and vigorous growth during the early part of the season. Those chosen immediately to succeed these may be selected from the intermediate succession, and turned out of doors as soon as the young wood is well ripened, which is usually in July ; they may stand out until the middle of October.

The Camellia requires a little extra heat to cause it to produce both wood and flowers with any degree of luxuriance, and it is in the application of such heat that the entire amount of success or failure depends. The growing season follows closely on that for the production of flowers, and *it is then* the plants require their first seasonal excitement ; this is caused first by repotting, and secondly by placing the plant in a little higher temperature than that in which it produces its flowers.

The best season for repotting is either *immediately after flowering*, or as soon as the young wood and leaves have become *firm enough* to handle without injury. Now, as before remarked, it is in the production of the new wood that the first stimulus is required, so that if the plants are repotted immediately after flowering, the benefit of the new soil goes at once towards the formation of a new and vigorous growth ; one of the most essential things in the cultivation of this or any other plant, and on this account I greatly prefer the first of the times mentioned as the season for repotting.

REMARKS ON THE SHOW CLASS CALCEOLARIAS.

BY MR. JOHN PLATT, GARDENER, WOODSEATS HOUSE, NEAR THORNHAM.

I AM aware that the successful culture of these charming plants is considered by many persons to be difficult, but a friend of mine manages them superior to anything I have seen elsewhere, and by very easy and simple means. He was kind enough to furnish me with the particulars of his treatment, which, with much pleasure, I forward for insertion in the "Floricultural Cabinet." He states as follows:— "August is the most critical and trying month for herbaceous Calceolarias; and the reason appears to be, that being weakened by the flowering which is just over, and the whole system of the plant stagnated, in consequence of there being no leaves and branches to assimilate food in proportion to the previous excitement, the plant therefore requires rest; and as August is often a very hot month, it is difficult to prevent undue excitement, which at this season is often fatal. We therefore select for them a cool shady situation, and take care that they are not over watered. After a little time a new series of roots are emitted around the base of the stem, and when this is perceived it is proper to shake them out of the pots, prune off any of the old dead roots (but not too close), and re-pot in sizes smaller and more proportioned to the roots; they are then placed in a cold pit, the bottom of which is well drained and covered with fine coal ashes; each pot is placed on a brick or an inverted flower-pot, so as to bring it near to the glass; they are kept close for a day or two, and shaded, after which abundance of air should be given, and in fine weather the lights frequently taken off. As soon as they have well started into growth, they will require to be cut back so as to reduce them into shape. If the cuttings are not required, this cutting back *may* be done at the time of re-potting; but, as it is always best to keep up a young stock, I prefer having them on until the plants have again started into action, at which time the chances are in favour of leaving the old specimens better furnished, and the cuttings are more likely to succeed. I put these cuttings into small pots, and place them in a frame with a gentle bottom heat; they are examined at intervals, and those which are well rooted are removed into a cold pit to harden previous to giving them more pot room. I have now brought both cuttings and old plants to what I call the shifting point; and here I must observe that, with reference to the Calceolaria, it is out of place to give any set time for the shifting into larger pots: the state of the roots must be our guide, and consequently both cuttings and old plants must be often gone over, and those only shifted whose roots are in a fit condition. These operations may be carried on in mild weather all through the winter and early spring, for the Calceolaria is, when kept a few degrees above freezing point, in action during all that time; but as that action is slow, the rooting process is necessarily slow also, and therefore the reason why the shiftings cannot be generalised. The Calceolaria does not at any time re-

quire a great heat ; in fact, it would live out of doors if the temperature did not fall *below the freezing point* ; therefore I think it injudicious to prefer keeping the herbaceous sorts in a greenhouse, where fire heat exists, when they may be *so much better preserved and grown in a cold pit*. I keep them in such a structure up to the time of the BLOOM EXPANDING, WHEN THEY ARE REMOVED TO THE GREENHOUSE ; and to preserve the blossoms a shading of muslin is fastened under the glass, to screen them from sun. Whilst in the cold pits, the plants will require occasional fumigations with tobacco, whether infested or not, as *prevention is better than cure*. They should not be placed too near together, and the flower stalks must be secured as they are thrown up. Shading must be resorted to whenever the sun is out strong ; at *no time* will the plants bear *intense bright sun* ; inattention to this will cause many a blank in plants, and many a crumpled bad flower. With regard to the soil, which also is a point of great importance, I would recommend a rich sandy loam, very fibry and soft, two years from the pasture field ; if not sandy enough, it must be made so. This will suit them well in the early stages ; when the roots are well established and the whole system in full action, an addition of one-third leaf-mould and a little very decomposed manure may be made to the loam. At each shifting the drainage must be kept open ; and water must be given as required ; when in full growth they require plenty.

ON THEORY AND PRACTICE; ALSO, THE FOOD OF PLANTS.

BY AN EXAMINER.

YOUR *Floricultural Cabinet* is well calculated to make a valuable work, as you adhere to the proper principle, which is, *to diffuse a knowledge of the cultivation of plants deduced from practice*. The object of every cultivator is to produce certain effects ; and when people undertake to produce any effect, who do not know the cause, they generally form some supposition of what the cause is. Such supposition forms theory, which may be true or false ; and as the latter is too often the case, the students of every art are apt to treat theory with contempt, and to depend upon the knowledge to be required by imitating a practitioner. But the knowledge to be obtained from mere practice, however successful, is little to be relied upon ; for, although the cause of success may assist, the practitioner may be ignorant of it ; and, therefore, although the same practice may be followed in another situation, it may fail altogether, because the cause is not there established. If it be an axiom, that every production of nature and of art is the effect of some cause, it must follow, that before any effect can be produced, the cause must be established ; and before any effect can be effectually prevented, the cause must be removed ; and, consequently, before any person can establish or remove a cause, they must first know what it is.

Then, how is a knowledge of the causes of effects to be obtained? Certainly by no other means than by first forming a theory, and then putting it to the test of practical demonstration, to ascertain its truth or falsehood. If a theory be thus proved to be true, the knowledge of it is science. I consider the causes of all effects to be certain elementary principles established in nature, and which are brought into action or rest, and made to exist in a separate or combined state, and to undergo certain changes in form and duration of their existence, by certain immutable laws of nature. My efforts have long been directed to the ascertaining the true causes of the different effects it is desirable to produce by the cultivation of plants, as well as the true causes of those effects it is desired to prevent; and, for this purpose, I have not only put my own theories to the test of repeated practical experiment, but also most of the theories of the celebrated physiologists and chemists, and practical professors of horticulture. And, in this, all who have done me the honour to visit my garden, admit that I have established many important principles of practice. My practical elucidations are more particularly exhibited in the training and feeding of fruit trees: I say, *feeding*, because it is an obvious fact, not only that plants require food to sustain them as much as animals do, but that their growth and productions are determined by the quality and the quantity of the food they are supplied with. As to give such an explanation of the nature and properties of different soils, and of different manures, or the elements of the food of plants, would occupy more of your pages than you can afford, you will probably allow me to refer such as wish to make a minute inquiry into those subjects, to a little work published, "On the Causes of the Barrenness and Fruitfulness of Plants and Trees." I will, however, beg leave now to offer the ninth law of nature in the arrangement, for the immediate consideration of your readers, and shall be ready to give any further information in my power. The ninth law—"The leaves form the excretory organs of a plant or tree; and whether the supply of food be great or small, a plant or tree cannot attain, nor sustain itself in, a state of fructification, until it is furnished with a surface of leaves duly proportioned to the sap supplied by the roots. To enable them to perform their functions, it is also necessary that the leaves should be duly exposed to the action of light, and to the influence of the sun and the air." Now, according to this law, it must be obvious that the cutting back and shortening the branches and lessening the quantity of leaves must obstruct and retard, rather than forward the production of flowers, seeds, and fruits; and yet this is a general practice. It generally happens, that when a plant grows luxuriantly to leaves, branches, and stalk, it is but little inclined to produce blossoms. We may, therefore, justly conclude, that in such cases there is a greater supply of food than the leaves are equal to; and that, although we cannot enlarge their powers, we can relieve them in their duties, by lessening the supply of food, and thus promote fructification.

PROPAGATION OF TREES BY CUTTINGS IN SUMMER.

BY A PRACTITIONER.

WHEN a cutting of any deciduous tree is planted in autumn, winter, or spring, it contains within it a portion of the true, as it is has been called, or vital sap of the tree of which it once formed a part. This fluid, relatively to plants, is very closely analagous to the arterial blood in animals; and I shall, therefore, to distinguish it from the watery fluid which rises abundantly through the alburnum, call it the arterial sap of the tree. Cuttings of some species of trees very freely emit roots and leaves, whilst others usually produce a few leaves only, and then die, and others scarcely exhibit any signs of life; but no cutting ever possesses the power of regenerating and adding to itself vitally a single particle of matter, till it has acquired mature and efficient foliage. A part of the arterial sap previously in the cutting assumes an organic solid form, and the cutting, in consequence, necessarily becomes, to some extent, exhausted.

Summer cuttings possess the advantage of having mature and efficient foliage; but such foliage is easily injured or destroyed, and if it be not carefully and skilfully managed, it dies. These cuttings, such as I have usually seen employed, have some mature and efficient foliage, and other foliage which is young and growing, and, consequently, two distinct processes are going on at the same time within them, which operate in opposition to each other. By the mature leaves, carbon, under the influence of light, is taken up from the surrounding atmosphere, and arterial sap is generated. The young and immature leaves, on the contrary, vitiate the air in which they grow by throwing off carbon; and they expend, in adding to their own bulk, that which ought to be expended in the creation of shoots. This circumstance respecting the different operations of immature and mature leaves upon the surrounding air, presented itself to the early labourers in pneumatic chemistry. Dr. Priestley noticed the discharge of oxygen gas, or dephlogisticated air (as it was then called), from mature leaves. Scheele, making, as he supposed, a similar experiment upon the young leaves of germinating beans, found these to vitiate air in which they grew. These results were then supposed to be widely at variance with each other, but subsequent experience has proved both philosophers to have been equally correct.

I possess many seedling young trees of the *Ulmus campestris*, or *suberosa*, or *glabra*; for the widely varying characters of my seedling trees satisfy me, that these three supposed species are varieties only of a single species. One of these seedling plants presented a form of growth which induced me to wish to propagate from it. It shows a strong disposition to aspire to a very great height, with a single straight stem, and with only very small lateral branches, and to be, therefore, calculated to afford sound timber of great length and bulk, which is peculiarly valuable, and difficult to be obtained, for the keels

of large ships; and the original tree is growing with great rapidity in a poor soil and cold climate.

The stem of this tree, near the ground, presented, in July, many very slender shoots, about three inches long. These were then pulled off and reduced to about an inch in length, with a single mature leaf upon the upper end of each, and the cuttings were then planted deeply in the soil. The cuttings were then covered with bell glasses in pots, and put upon the flue of a hot-house, and subjected to a temperature of about 80 degrees. Water was very abundantly given, but the under surfaces of the leaves were not wetted. These were in the slightest degree faded, though they were fully exposed to the sun; and roots were emitted in about fifteen days. I subjected a few cuttings taken from the bearing branches of a mulberry tree to the same mode of management, and with the same result; and I think it extremely probable, that the different varieties of *Camellia*, and trees of almost every species, exclusive of the *Fir* tribe, might be propagated with perfect success and facility by the same means.

Evergreen trees, of some species, possess the power of ripening their fruit during winter. The common Ivy and the Loquat are well-known examples of this; and this circumstance, combined with many others, led me to infer that the leaves of such trees possess in a second year the same, or at least, nearly the same power as they possessed in the first. I therefore planted about a month ago some cuttings of the old double-blossomed white and Warrahtah *Camellia*, having reduced the wood to little more than half an inch in length, and cut it off obliquely, so as to present a long surface of it; and I reduced it further by paring it very thin and near to its lower extremities. The leaves continue to look perfectly fresh, and the buds in more than one instance have produced shoots of more than an inch in length, and apparently possessing perfect health and much vigour. Water has been very abundantly given; because I conceived that the flow of the arterial sap from the leaf would be so great, comparatively with the quantity of the bark and alburnum of the cuttings, as to preclude the possibility of the rotting of these.

The cuttings above described, presented in the organization a considerable resemblance to seedling trees of different periods of the growth of the latter. The bud very closely resembles the plumule, and the leaf, the cotyledon, extended into a seed leaf; and the organ which has been, and is called a radicle, is certainly a caudex, and not a root. It is capable of being made to extend in some cases, to more than two hundred times its first length, between two articulations, a power which is not possessed in any degrees by the roots of trees. Whether the caudex of the cuttings of *Camellias* above mentioned have emitted, or will, or will not, emit roots, I am not yet prepared to decide, but I entertain very confident hopes of success.

ROYAL BOTANIC SOCIETY.

THE lecture by Professor Bentley, delivered in the Museum of the Royal Botanic Society, on Friday, June 23rd, was "on miscellaneous articles used in the preparation of beverages in common use in different parts of the world," including tea, coffee, cocoa, and chocolate. As tea is the article most generally consumed in this country, Mr. Bentley directed attention principally to it. All infusions of the leaves of plants are called teas, but the plant generally known as tea comes principally from China, though it is cultivated extensively in the East Indies and in other parts of the globe, the climate peculiarly favourable to the growth of good tea being found within 27 and 31 degrees of latitude. The best kind of tea imported from China is derived from the variety "the viridis," so called from the notion that it produced green tea; but it has since been ascertained that black and green tea are gathered from the same plant, the difference in colour and quality being owing to different means of preparing and drying the leaves. The black tea when gathered is thrown into heaps, where it lies for some time before it is rolled; it is then thrown about to expose it the air, and again lies in heaps till it is dried. By this means it undergoes a slight process of fermentation, and the leaves turn black, as all leaves do when gathered and allowed to lie together. The green tea, on the contrary, is rolled and dried as soon as it is gathered, and thus retains the natural colour of the leaves. The properties of tea which render it valuable as an article of food, are derived for the most part from an alkaloid called theine, which contains a large proportion of nitrogen, the element whence flesh and blood are obtained. The effect of tea on the animal frame is to exhilarate the mind, and at the same time to tranquilise the bodily functions, the supply of theine preventing the waste of the body, and in this manner saving food. Mr. Bentley observed that there is a remarkable resemblance in the properties of the vegetable substances selected by the inhabitants of different parts of the world for their common beverages; for the different kinds of teas, coffees, and cocoa all contain an alkaloid resembling theine in its chemical properties and physiological effects, though varying in the proportionate quantities. Tea-leaves, from which the infusion has been extracted, are still valuable for the nutriment they contain, the amount of flesh and blood-producing material being greater in tea than in the cereal grains, and in some countries the natives eat them as food. Paragua tea, gathered from a species of holly, is more stimulating than the tea-plant of China, and when taken in excess produces the injurious effects of ardent spirits. Coffee-tea and Labrador tea belong to the heath tribe of plants, and contain the same principles as the tea from China. The former is extensively used by the people of Sumatra, and has latterly been imported into this country. As it can be sold at the low price of twopence per pound, it might become an important article of food, if a relish could be

acquired for its peculiar flavour. Such a result is not improbable, for the preference now given to tea and coffee is an acquired taste ; and as evidence of the difference of taste for teas between the English and Chinese at present, samples of Pekoe flower tea were shown, which is in such high estimation by the Chinese that it costs two guineas a pound, though it has not a sufficiently strong flavour for the English tea-drinker. In treating of coffee, Mr. Bentley pointed out the presence in the coffee berry of the same principle that gives the nutritive and stimulating qualities to tea ; and there is in coffee also a volatile oil, which is developed during the process of roasting, that increases its value as an article of food. Raw coffee is improved by age, which gives increased whiteness to the berry. The chicory plant, a species of the common endive, which has been extensively used for mixing with and adulterating coffee, possesses scarcely any portion of the nutritious properties of the coffee berry ; and Mr. Bentley strongly discountenanced its use, as it contains no nutriment, and only weakens the beneficial effect of the real beverage. Cocoa contains more nutriment than any of the substances before noticed, and combines the qualities of tea with those of milk. When, therefore, the fatty property it possesses does not disagree with the stomach, cocoa, especially when prepared from what are called "cocoa nibs," is eminently nutritious, and an extremely valuable article of food. Some idea may be formed of the importance of the articles used in the preparation of unfermented beverages, from the quantities that are consumed. Thus, in 1852, fifty-four tons of tea were imported into this country from China, which was but the forty-fifth part of the quantity produced; whilst of coffee thirty-five millions of pounds were consumed in England, and one hundred millions of pounds on the continent. Specimens of the various plants and substances mentioned were exhibited, and much curiosity was manifested to examine the two-guinea a pound tea, which is too refined in flavour for appreciation by English palates.

MISCELLANEOUS.

WELLINGTONIA GIGANTEA. Since this name has been given to the tree which Mr. Lobb discovered to be a new genus, some of our American brethren have given publicity to some unkind remarks upon the same, which appeared in the April "Magazine of Horticulture and Botany," edited by Mr. Hovey, of Boston, in the United States.

It is there stated that long before Mr. Lobb had seen the trees, some of the American Botanists, among which was Mr. W. K. Prince, had seen them, and in consequence they had a prior claim to give the plant a name. They deprecate the name which Dr. Lindley had suggested of *WELLINGTONIA*, and considered it ought to bear the name of

WASHINGTON if it is a genus, which at present the American Botanists dispute. Subsequently the editor had written to Mr. W. R. Prince on the subject, and the following is an extract from his reply. We omit however some abusive expressions which appear in Mr. Prince's letter relative to the HERO after whom it has been named in England.

"THE GIANT TAXODIUM OF CALIFORNIA.—Your note in relation to this tree was duly received. I can only say, that to talk of naming that Taxodium 'Wellingtonia' at this late day, as if it was a new discovery, is utterly ridiculous. I, with a party of twelve others, ascended the Stanislaus in June, 1849,—and there were, besides ourselves, some thousands of Americans who saw the splendid tree referred to, during that year, and it is found growing extensively in the immense belt of forest trees as you ascend to the great central ridge of the Sierra Nevada. The usual size of large trees of this Taxodium was twenty-four feet in circumference, but occasionally we found them thirty-six feet in circumference; and one we met with, more especially large and grand, we christened '*The King of Trees*.' This gigantic species has been confused by many with the Taxodium pinnatum, so plenty at Monterey, and even with the Taxodium sempervirens; and I notice it has been called by some '*Sequöia gigäntea*.' I have no time to go more into detail at present, and I will now simply remark further, that if this tree is really a genus distinct from Taxodium, we should, in selecting its title, adopt the name of that man, who more than all others deserves the homage of his race, our beloved Washington. I am, however, of opinion that the tree we have been speaking of and the Taxodium pinnatum, so plenty at Monterey and elsewhere, are not sufficiently distinct from established genera, to authorise the formation of a new one. You are probably aware that it is these two species that in California are called Redwood, and that they furnish the mass of long shingling, so universally in use throughout that country. By-the-by, I recall to mind a good joke that occurred during our mountain rambles. A party of us stood one day gazing at some of these lofty trees which appeared to be about 280 or 300 feet in height, and were expressing our astonishment, when a fellow cried out to us, 'You need not think much of such saplings as them, for if you go about twenty miles further you will find plenty that are so tall you can't see the tops of them.' W. R. PRINCE."

It is evident that Mr. Prince and his companions had not made the discovery which our respected and clever countryman, "Mr. Lobb" did, that it was a different tree to any previously described by any Botanical traveller, and he at once took measures to bring this New GENUS into public notice; and himself, his much-respected employers, Messrs. Veitch, or other person they might select, had a *first* and *just* claim to give it a name; and it is to the honour of the individual who named it that he selected the most appropriate one he did, and which will remain its enduring one.

FLORAL OPERATIONS FOR THE MONTH

IN THE FLOWER GARDEN.

JULY is proverbially hot and dry; it will therefore be highly necessary, during the continuance of dry weather, to administer copious supplies of water. This should be done towards the evening of each day, because the plants have then time to absorb the water *gradually*, and appropriate such portion as contributes to their well-being. It is only in extreme cases that water should be given in the morning, because it is then so quickly exhaled from the soil, as well as the leaves, that its refreshing and nutritional properties are almost wholly wasted. Rain-water is best, or that from an exposed pond or tank. Where beds of plants have been repeatedly watered through a rose, the surface of the soil will probably have become *crusted* and almost *impervious* to moisture; consequently they ought to be stirred over occasionally with a small fork. A few annuals, as *Mignonette*, &c., may now be sown to bloom in the autumn, also biennials to bloom next year.

FLORISTS' FLOWERS.—*Auriculas* and *Polyanthas* should be kept in the *shade*. At this season of the year the plants are often attacked with green fly; dip the plants in a solution of tobacco-water. *Tulips* will have perfected their growth, and should now be taken up, as if allowed to remain too long it invariably acts prejudicially on the bulb. *Ranunculuses* will require to be taken up as soon as their foliage has become withered and dry. *Pinks* may still be piped. *Carnations* and *Picotees*: As the pods are fully formed and ready to open, secure them round with a ring of india-rubber, gutta-percha or bass, to prevent their bursting on one side. When blown, they should be shaded. Never suffer the plants to flag for want of water. Proceed with layering. *Dahlias* will require *thinning out* freely as they advance in growth. If sprinkled overhead with soft water late in the evening with a fine rose or syringe, their luxuriance will be greatly promoted. *Pelargoniums* that have shed their flowers should be cut down, disrooted and potted in smaller pots, keeping the plants for a week in a close frame, to assist them in developing their new shoots. *Roses* may now be budded, moist weather being best for the operation. It is of importance that there should be a resemblance between the bud and the stock as to the vigour of vegetative growth, in order to ensure a successful result. If a Rose of slow development is budded on a rampant briar, and all the strength of the latter is turned into the parasitical stranger, health cannot be maintained, nor will a freely vegetating Rose submit to be impeded in its progress by a sluggish stock. Thin away surplus branches from all stocks not budded as early as possible, not to wait a day even, but get the branches strong and healthy.

IN THE FORCING STOVE.

Where stove and green-house plants afford suitable cutting, propagation must now be pursued; as, generally speaking, it can be practised with the greatest success in the *early* rather than the *later* part of the year. It should be remembered that the propagation of most plants is facilitated by the employment of *bottom-heat* and *bell-glasses*. Stove plants will derive great advantage from a partial shading during the glare of the day, and will be less liable to injury from drought. Many plants that will require shifting, such as *Justicias*, *Clerodendrons*, &c., give plenty of water at the roots, syringe daily, in the *evening*, and keep the floors of the house and every part damp, to assist in maintaining a humid atmosphere. Bulbs of *Amaryllis*, &c. should be put together in a pit or frame, where they will be near the glass, and where the influence of the sun, with a gradual

diminution of water will mature them. Never permitting the foliage to flag is a good criterion as to the quantity of moisture plants require; keep as near that state as possible. Re-pot Achimenes, Gloxinias, Gesneras, &c.

THE GREENHOUSE, ETC.

As a free ingress of air must necessarily be permitted during fine weather, its rapid circulation, conjoined with active solar heat, must cause a rapid evaporation both from the plants and soil; hence there exists a necessity, under the above circumstances, of watering and syringing frequently. However beneficial a screen may be during bright hot sun, its presence is not required while the sun is obscured. Encourage the growth of Azaleas and Camellias by keeping them comparatively close (with shade during sunshine), and supplying them liberally with moisture administered by the syringe. Propagate Roses by cuttings from those plants which have been forced, and place the plants in a rather shady situation, in order that they may have a period of rest for a few weeks. Calceolarias that have ceased blooming should be re-potted; cut off dead tops, place the plants in a situation where they can be shaded from hot sun, admitting it morning and evening. Seed should be sown, so as to have the plants strong, to endure winter; such will bloom next season, and be much more vigorous than plants raised from cuttings. Cinerarias also that have done blooming should have the tops cut off, be fumigated, in a close frame, as they are often affected with green fly; after which the plants should be turned out of the pots, and planted in a somewhat shady bed of good soil in the garden. Sow seed now; the young plants will bloom early next spring. Epacrises, Ericas, &c. now done blooming, may be cut in, to render them bushy. The tubers of Tropaeolums which have ceased blooming, and the tops withered, must be taken out of the soil, or be kept in a bag, &c., or the pot must be put aside, where it may have the soil kept dry till potting time. Greenhouse plants placed in the open air in pots should have frequent waterings at the under side of the foliage, to destroy or keep down green fly. Moss laid lightly between the pots keeps the roots somewhat cool, and tends to promote the health of the plants. Occasionally water the moss, if the weather be hot and dry. A concrete floor, or one formed of lime rubbish or fine gravel, cemented together with gas tar, is essential to keep the worms out of the pots.

BRIEF REMARKS.

THE MAELURA AURANTIA (or Osage Orange) A HEDGE PLANT.—This plant is a native of North America, and was first introduced in England in 1818. It is quite hardy; but as it has seldom bloomed in this country, it has attracted but little attention. In America it has lately been used as a hedge plant, and strongly recommended to us for the same purpose. In referring to it, Professor Turner, of Jacksonville, in the United States, writes—"Our hedges are indeed splendid, and when three or four years old will turn anything, bidding defiance to man, pig, or fowls." He adds, "It is the best *hedge plant* that has hitherto been discovered in this or any other country." It is a stiff *bushy* growing plant, bearing numerous strong hooked spines, through which it would be difficult for any intruder to pass, when the shoots are once well interwoven together. We extract the following particulars from a pamphlet recently sent us from Boston:—

"If the seeds are procured in spring, planting may be deferred until the ground has become warm. In the latitude of New England, any time during the month of May has been found to answer. In order to have them vegetate quickly, they should be put to soak in soft warm water, and allowed to remain three, four, or five days, or until they are very much swollen, and the germ has begun to appear. Keep the water constantly warm by allowing the vessel to stand in a warm place covered with a cloth, and change the water daily, to avoid fermentation; mix with a little dry earth or sand when you get ready to plant. The ground for the nursery should be a rich sandy loam, deeply worked and finely pulverised. Proceed to lay

it out in drills 18 inches apart, and drop the seed at intervals of half an inch in the row; cover firmly with fine earth a few inches deep. They should be well attended to throughout the season, in order to secure as large a growth as possible. A quart of seed will produce 3,000 or 4,000 plants. It sells in America for a dollar a quart. It will take 10,000 or 12,000 plants for a mile of hedge.

"In preparing for the hedge, unless the soil is very mellow and rich, a trench not less than two feet wide, and as deep, should be dug on the line where the hedge is to stand, and filled up with equal parts of well-rotted manure or compost, and rich earth. Planting may be done after warm weather has commenced in spring. The plants should be prepared for setting by shortening the roots to within 8 or 9 inches, and the top to within 1 inch of the root. Select those of a uniform size as the best to be planted together; stretch a line where the row is to stand, and set out the plants not more than 10 inches apart, in a single line thus— * * * * * or diagonally, thus * * * * * making them a foot apart in each row. It is recommended never to set the plants further apart than stated above, as at greater intervals the stalks must grow larger and the roots extend proportionally; besides, it requires much more labour in pruning, for which the saving in plants is by no means adequate. As regards the single or double row, Professor Turner and others maintain that a single line is all that is necessary or desirable, while some are inclined to the latter method. Either undoubtedly answers the purpose well.

"The Osage Orange will bear almost any amount of trimming, and a hedge sufficiently firm and compact at the base can be made in no other way than by regular and severe cutting down. The spring succeeding, or one year from the setting, cut all down to within 4 inches of the ground. In consequence of the first pruning at the time of setting each plant will have thrown out three or four shoots. The second cutting will cause these to multiply to six or eight, which will nearly fill the space between the plants. A second trimming should be given when the plants are making a vigorous growth, from the middle to the last of June, cutting off the tops smooth and even to within 4 inches of the ground. The next spring cut to within 5 inches of the preceding cutting, and in June likewise. Continue these spring and June prunings, increasing the distance an inch every year until the hedge shall reach the height desired. The side and lateral branches may be pruned and thickened so as to render it impenetrable to a bird. As regards the shape of the hedge, the taste of the grower will dictate. A neat and most convenient shape for a strong hedge is about 5 feet high and 3 feet wide at the bottom, gradually narrowing so as to render the top like the ridge of a house. The growth after a few years is quite slow, and the shoots so fine that one can scarce believe it to be the same plant. One trimming a year will probably be all that will be necessary, except for ornamental hedges.

"The Osage Orange will be found a most efficient protection to orchards as gardens, as it is much easier to scale any kind of board fence that can be made, than an Osage Orange hedge 5 feet high. It is highly ornamental, and will also be found very suitable and appropriate for enclosing churchyards and cemeteries."

Messrs. Charlwood and Co., seedsmen, of Covent Garden, have received seed, and offer it for sale at a cheap price.

GROWING ORCHIDS FROM SEEDS.—At the present time there are few subjects connected with plant growing on which there is less recorded information than that of growing Orchids from seeds. I am not aware that there is any case on record of hybridisation having been effected among Orchids, though there seems no doubt that such could be accomplished by careful manipulation, an inference I draw from reasoning analogically on experiments made here to get seed. Many of our indigenous Orchids appear to seed freely, whilst comparatively few exotic species among our cultivated collections produce seed, circumstances suggestive of the idea that the latter require artificial assistance, which can be readily afforded, by carefully applying the pollen masses to the viscid face of the column and rostellum. But whether the seeds of hardy Orchids be generally imperfect, or the necessary circumstances for vegetation, and the subsequent growth of the young plants wanting, we certainly do not find crops of young orchids growing spontaneously in various stages of

growth, as occurs with most other endogens, though, when orchid seed does vegetate under favourable circumstances, a very large number of the myriads of extremely minute seeds contained in the ovaries are perfect, whether artificially impregnated or not. Within the last five years, seedlings of the following species have been raised in the Orchid-house at Glasnevin, namely, *Epidendrum elongatum*, and *crassifolium*, *Cattleya*, *Forbesii*, and *Phaius albus*, the seeds of which all vegetate freely. The manner of sowing the seeds, and treating the young seedlings, has been to allow the fine dust-like seed to fall from the ovaries as soon as they show symptoms of ripeness, which is readily known by the ovaries bursting open on one side. When this takes place, they are either taken from the plant and shaken gently over the surface of the other Orchid-pots, on the loose material used for growing them in, or on the pots prepared for the purpose, after which, constant shade, a steady high temperature, with abundance of moisture, are all requisites which are absolutely necessary to insure success. In the course of eight or nine days after sowing, the seeds, which at first had the appearance of a fine white powder, begin to assume a darker colour to the naked eye, and, if looked at with a Codrington, or even a simple lens, evident signs of vegetation may be perceived, which increase until the protrusion of the young radicle and cotyledon takes place, which varies from a fortnight to three weeks. From this period of their growth, the young plants grow rapidly, and the rootlets lay hold of whatever material is supplied to them. If the seeds happen, either accidentally or intentionally, to be made to vegetate on bare wood, as in some instances has been the case, the young roots extend themselves in different directions, adhering closely to the bark, and make great progress compared with the growth of the stems, thus affording beautiful examples of the manner in which epiphytical plants fix themselves so firmly on the highest boughs of lofty trees in tropical forests, as well as accounting for the isolated positions they frequently occupy in their natural state. The principal difficulty to contend with in rearing the young seedlings has been found to consist in their treatment during the first year, particularly the winter months, when they are very liable to perish, if anything approaching to extremes of moisture, draught, cold, or even heat be permitted; though a steady medium of all those requisites is necessary. The second year's growth has been one during which the plants made much progress, and the only two kinds which have been brought to a flowering state have bloomed the third season. These are *Epidendrum crassifolium*, and *Phaius albus*.

D. M., Glasnevin Botanic Garden, Dublin.

ON CARNATIONS.—Amongst the many valuable observations in your excellent work, on the culture of this beautiful flower, I do not meet with any remark which affords information and advice on the subject of their *suddenly withering and dying* at this time (May 20) of the year. In September last, I purchased several pairs from different eminent florists, and when they reached me, I thought I had never seen any looking more healthy and fresh. During the winter months, I adopted the course recommended by your correspondents; and, in April, I potted them in pairs into the flowering pots, and, until a week since, no layers could possibly present a more promising appearance, when, much to my surprise, not less than half a score of them rapidly withered and died: they had been regularly watered twice a week with soft water. On examining the stems, I found them all decayed immediately below the surface, and but little increased in roots, the mould, not as I expected, containing worms or slugs. The first time I observed the change, I followed the advice of *watering them with lime water*, but it was all to no purpose; and one most remarkable fact is, that, in one or two instances, only *one plant* in a pot died, the other continuing perfectly healthy. If they had all been affected in pairs I should have suspected the compost. Such, however, I am satisfied was not the cause; and that plants apparently so healthy, and in such an advanced stage, attended with every possible care, should so suddenly die, is to me at present unaccountable, and certainly a great disappointment. If, therefore, any of your experienced correspondents will oblige me with a few observations on the subject, I can assure you it will be conferring a particular and general favour, as I hear many of my neighbours have experienced the same misfortune, and are equally at a loss.

AN AMATEUR CULTIVATOR.

ON PLACING GREENHOUSE PLANTS IN THE OPEN AIR DURING SUMMER.—When the pots are exposed to the heat of the sun and drying winds, the fibrous roots, which are in quantity about the roots, are much injured by it, although the interior of the ball of earth be in a moist condition. The result of the pots being so exposed during summer is soon apparent by the edges of the leaves turning brown, or many of the leaves becoming wholly so. The plan I have adopted for four years has been the following, and the plants have grown freely and been of a fine healthy green, blooming profusely. I made a bed of sifted gravel, six inches deep, choosing the gravel that was about the size of horse beans. This gravel allowed the excess of water to pass away. It was laid on a concrete floor, formed of finer gravel and gas tar, which prevented worms entering through into the pots. The rough gravel allowed the pots to be plunged a little, so that the plants were not blown over, but kept steadily in their position. Having placed the pots, I fill up the spaces between with light moss, nearly to the rims of the pots. This method kept them cool, but not wet. If this be inserted in the next number of the "Cabinet," it may be of service to some of those persons who turn out plants during the summer.

A FLOWER GARDENER.

ON HERACLEUM ASPERUM.—I am much interested in a plant which, although possessing no beauty of flower, is distinguished by its size and stately appearance—*Heracleum asperum*, the Siberian cow parsnip, which in the open border, under favourable circumstances, will attain a height of ten feet, with leaves four or five feet long. It is a biennial, and should be sown where it is intended to stand, in a rich soil. When it shoots up the second year, it may be watered with liquid manure and warm water, which will greatly promote its rapid and vigorous growth.

W. C. J.

FANCY PELARGONIUMS.—These are almost without exception regarded as pot-plants only, and treated as such; planting them in the open ground is very seldom thought of, much less using them largely as bedding plants. The scarlet and variegated sorts, it need scarcely be observed, are necessary to every flower-garden; but the more beautiful fancy kinds, except one or two varieties, are but rarely indulged with a place there. It is the more remarkable that this is the case, when it is remembered how exquisitely beautiful they become, in good hands, when grown in pots under glass. It might be thought, if they only succeeded proportionately well in the open ground, which they will do, that they merit a trial there at least; and the fact is, it is the want of this trial, in the majority of cases, that prevents their admittance to the flower-garden. At Trentham, however, and a few other places, the fancy varieties are placed on the same footing as the scarlet, variegated, and Ivy-leaved kinds, and the effect the whole creates is such as to render the site they occupy the most attractive feature in the grounds. If, then, by dealing with fancy Pelargoniums as with other flower-garden plants, they can be made equally useful, what might not be done with them if the same principle were carried out in preparing plants for turning into the open ground that produces such gratifying results with those cultivated in pots? The fancy Pelargonium grows exceedingly rank when planted in rich flower-garden soil, branching very strongly, and bearing leaves twice their usual size; but few flowers, and those few neither of the proper size, shape, nor colour. Providing soil meagre in quality and quantity in which to grow them is, therefore, required to bring about the desired result; if, in conjunction with its provision, aged plants were also employed, the end in view will be more effectually gained. This last precaution would of itself suffice, and better effect the object than almost any combination of measures. Every one is familiar with the practice of lifting scarlet Pelargoniums year after year from the open garden, because they are more serviceable for future use than young plants, by bearing flowers instead of growing exuberantly; and what is successful in their case, is assuredly equally so in regard to the fancy kinds. As the planting season is at hand, I would commend these observations on this popular flower to the attention of your readers, trusting that many of them will give the plant a trial in the way I have mentioned. The kinds I have found to succeed the best are Anais, Queen Victoria, Hero of Surrey, and Defiance. *A. Gardener's Chronicle.*

ACACIAS.—Of the whole class of New Holland plants, few are more interesting than *Acacias*. The strange variety in the phyllodes or leaves, the profusion and fragrance of their blossoms, and the season of the year when they are in the greatest perfection, render them eminently worthy of cultivation. My object, therefore, in the following remarks is to bring, if possible, this interesting tribe of plants more into notice than it ever yet has been; and with that view, I have sketched or drawn out the more prominent characters of a collection of twenty-five, well adapted for the conservatory border, shelves, or the greenhouse stage; but before I commence my enumeration, permit me to offer a few words common to the generality of those I intend bringing under notice:—First, I have to state that the whole of these *Acacias* are natives of various parts of New Holland; therefore enjoying a brisk growing climate through the spring months, and a dry atmosphere during summer. And thus we are furnished with two leading points whereon to base the successful cultivation of this genus; these are, to maintain such a condition of climate as will insure a quick growth, and when once that is obtained, nothing is better for ripening it than an exposure to bright sunlight, with a free circulation of air at all times. Second, *Acacias* generally seed well; and thus propagation is rendered easy, as the seeds germinate freely, either when sown as soon as they are ripe, or kept back until the ensuing spring. In the latter case, they must be soaked in hot water. I have, however, seen seeds which have fallen from *cyanophylla* and other species, spring up as plentifully as *Sycamore*. Another mode of propagation is by means of cuttings placed in sharp sand, and the pots placed on a warm greenhouse shelf for a month or six weeks, and then introduced into a growing temperature of about 70°, taking care to have the cuttings covered with bell-glasses, until roots have been freely emitted; afterwards, pot off singly, and place them again in the same situation, until they have got well established, when nothing more is needed than ordinary attention. The soil most suitable for the *Acacia* is three-quarters good turfy loam, with the remainder made up of peat and sharp sand. Another point, which I think is not generally known, is that the generality of them, although very gummy, stand the knife well, without appearing to suffer from its effects; at least with some species its application is absolutely necessary, in order to form good specimens, and keep them within bounds.—J. A. BECKMAN. *Gardener's Chronicle*.

ON DESTROYING ANTS.—Being from home some time, I had not the opportunity of reading earlier several of my late numbers. In one I perceive a query respecting Ants; and if you think my experiment likely to be of any utility, I shall feel very glad in having it in my power to tender a trifle to so generous and valuable a work. I have a large garden, two-thirds of which is a kitchen garden, the other a flower-garden. I had some valuable apple trees in the former, also peach, nectarine, and apricots, against the walls, from which, for three years, I could obtain but little fruit; the bloom was abundant, but as soon as it set, and got a little size, it nearly all fell off; and on very strict observance one day, I perceived the trees were all infested with thousands of Ants; and on speaking of it to a clever old gentleman in gardening, he said that tar was the only preventive to those insects, and that I must tar the trees about three or four feet high from the ground. Accordingly, the next day, I had it attended to, by having a pot of tar brought into the garden, and an old paint brush; fearing this might injure the bark of the tree, I had a ring made of it quite round the bole of the trees next the earth, and a thick coating along the lower part of the brick wall; and when it was getting dry, I gave a second coating. I soon perceived the Ants would not touch it; the smell seemed to annoy them, for scarce any were caught on it. The next thing was to destroy the insects; and as I knew lime would kill small insects, I had a large tub of lime (finely sifted with a hair sieve) brought and kept there; their haunts are easily traced, but will require for the first time dressing, a man and a boy. Where there is a great quantity of these marauders, they make their roads, and very frequently across the paths, which is soon perceived, which will direct you to their haunts. Where they enter, by small apertures in the ground, having ready a sieve full of lime, and a water-pot full of strong lime water, take a spade and gently turn up the earth till you come to the Ants, which will be found in immense

numbers; sift the lime over them immediately; this confuses them. Rake the earth on them quick, and water over well with the water pot; this first dressing is some trouble, but afterwards a boy can do it well, if shown how to leave the earth neat. The next summer we pursued the same plan, only I used thick gas tar, which did equally well; also in winter I had a solution of gas tar and soft water, and washed the wall and the trees with it, but did not find half the number of insects, and the next a very few; and afterwards had no further annoyance from them, but plenty of fruit. The white currant trees they attacked, when in full bloom, which nearly all fell off; the flowers did not suffer much from them, except the succulent kind. As to Balsams, I could not get one to bloom; in my observations of them, I perceived they attacked the stalk of the fruit or flower, next to the tree, and by sapping out the juice which should nourish the fruit or flower, caused it to decay and fall off. Upon taking up some of the fresh-fallen apples, and cutting through the stalks, I found them dry and spongy.—A SUBSCRIBER.

COMPOSTS.—If H. S. procures good loam, very rotten horse or cow dung (quite mould), silver or white pit sand, and peat or heath mould, he will have all the ingredients necessary for Composts for almost every plant that grows. The proportions must of course be adapted to the nature and necessities of each particular plant.—A LONDON PLANT PROPAGATOR.

ON TRAINING THE *CAMELLIA RETICULATA*.—All who are engaged in growing the *Camellia* are aware that the *C. reticulata* is one of the most unmanageable to bring into a good form; nor, indeed, is it likely to receive much attention on account of its own merits, while the number of far more beautiful varieties is being augmented every year. But though it is principally used as a stock on which to graft better sorts, there are but few collections in which it is not allotted a place; and it is certainly desirable to retain it, as its amazing size (ten inches across) and showy colour compensate for any defects. In a communication published in the "Annales de la Société d'Horticulture de Paris," M. Neumann briefly notices the results of an experiment which he made with a plant of this sort, and which, instituted by so eminent a cultivator, would seem to prove that this desirable object may be attained with complete success. M. Neumann narrates his experiment as follows:—"Last year, selecting a vigorous plant for my purpose, I commenced to pinch off the young shoots as soon as they were two inches long. The operation was performed about the end of April. This year the same plant produced three flowers, and twenty-seven wood buds, or shoots, of which a good number were borne on the wood three and four years old, a circumstance which never happens in the absence of such an operation." Pinching the young shoots, when properly performed, is always conducive to the growth of fresh wood, as may be seen in the dense and handsome specimens which are exhibited every year; but though this practice is familiar to all horticulturists, no one except M. Neumann appears to have thought it worth while to apply it to the variety of *Camellia* under consideration.

TO BANISH ANTS.—An effectual method of banishing ants from any particular spot or plant infested by them, is accomplished thus.—With a trowel turn up the soil containing the ants, eggs, &c.; let it lie loosely, and pour upon the place a pot of sand. In a few days the ants will have deserted the spot, being effectually prevented by the falling in of the sand from continuing their labours.—A. B.

ON HEATING BY HOT WATER IN GLASS TUBES.—R. must be under some mistake respecting glass tubes employed in hot water apparatus, as his statement that they give out heat quicker, and retain it longer, is self-contradictory, to say nothing about the affording a higher temperature. The subject was most accurately investigated by Mr. T. Tredgold some years ago. The result was, that water in a glass tube gives off its heat rather more slowly than in an iron one, in the ratio of 155, 180, where the iron is covered with rust, as hot water pipes generally are; consequently iron pipes give out heat quicker, and under equal areas of external surface produce a higher temperature than glass would, and of course the heat contained in them is more rapidly expended.

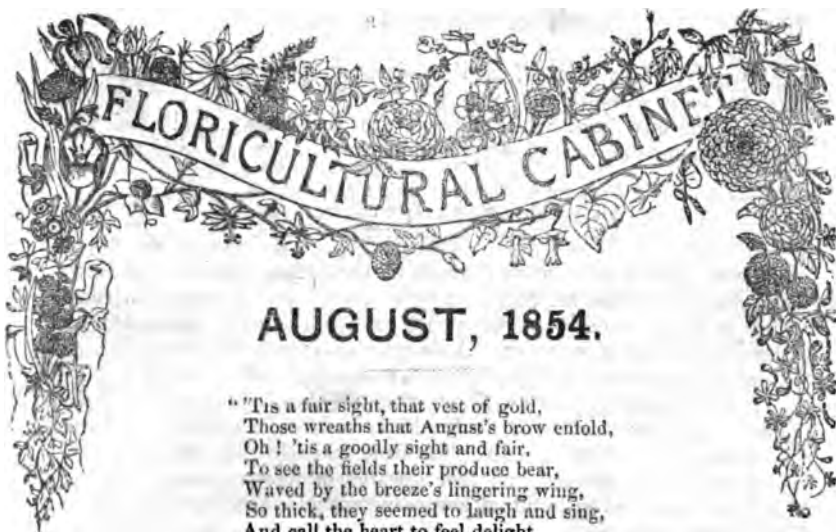
LIQUID MANURE FOR CARNATIONS AND PICOETTES.—Your contributor may safely apply the drainings from the stable, cow-house, or manure-heaps. It should be stored in a covered tank, in a perfectly clean state, and before using, any fermentation incidental to recent drainings should be permitted to pass off. When applied, dilute it with six or seven times its bulk of soft water, and let the plants have it about thrice a week, in the evening, during the swelling of the buds. But it must always be borne in mind, a strong plant will luxuriate in that food which to a weakly one would be repletion and death. Where accessible, sheep-droppings form the basis of a liquid manure equal to any, but these I cannot obtain. Cow-manure also makes an admirably fertilizing liquid; but whenever a decoction is prepared from green manures, care should be taken to destroy the grubs they are so likely to engender, by the introduction of a small quantity of quick-lime. Stimulants of a cool nature are an essential for the carnation; everything hot and highly exciting, as guano, night-soil, &c., should be carefully avoided.—E. S. D. *Midland Florist*.

AMARYLLIS BELLADONNA IN POTS.—I recommend any of your readers who wish to cultivate this plant in pots, to try the following experiment:—keep the plants constantly on a light shelf in the greenhouse, with a pan of wet sand underneath them, which should never be allowed to become quite dry, not even in summer, when the plant is dormant. By this treatment some bulbs received from the Cape of Good Hope, which if not *A. belladonna*, can hardly be distinguished from that species, have flowered regularly every autumn in great luxuriance. They should never be fresh potted unless the roots split the pots, which some of mine have done, and of course the foregoing treatment must not be adopted till the bulbs have rooted themselves. This management was adopted accidentally as regards these bulbs, having been ordered, under the suggestion of the Rev. W. Herbert, for *Brunsvigia Josephinae* and *multiflora*, which were received at the same time, and which now flower regularly every other year. For some fifteen years before, I never succeeded in getting any of them to flower. The ordinary cause of failure in the cultivation of *B. Josephinae* is too much heat in winter, and want of moisture in summer.—J. R.

ATMOSPHERIC INFLUENCE ON PLANTS.—The pressure of the atmosphere has a decided influence on the form and life of plants. From the abundance of their leafy organs provided with porous openings, plants live principally in and through their surfaces; and hence their dependence on the surrounding medium. Animals are dependent rather on internal impulses and stimuli; they originate and maintain their own temperature, and, by means of muscular movement, their own electric currents, and the chemical vital processes which depend on and react upon those currents. A species of skin respiration is an active and important vital function in plants; and this respiration, in so far as it consists in evaporation, inhalation, and exhalation of fluids, is dependent on the pressure of the atmosphere. Therefore it is that alpine plants are more aromatic, and are hairy and covered with numerous pores. For according to zoonomic experience, organs become more abundant and more perfect in proportion to the facility with which the conditions necessary for the exercise of their functions are fulfilled, as I have elsewhere shown. In alpine plants the disturbance of their skin-respiration occasioned by increased atmospheric pressure, makes it very difficult for such plants to flourish in the low grounds. The question whether the mean pressure of the aerial ocean which surrounds our globe has always been the same, is quite undecided; we do not even know accurately whether the mean height of the barometer has continued the same at the same place for a century past. According to Poleni's and Toaldo's observations, the pressure would have seemed to vary. The correctness of their observations has long been doubted, but the recent researches of Carlini render it almost probable that the mean height of the barometer is diminishing in Milan. Perhaps the phenomena is a very local one, and dependent on variations in descending atmospheric currents.—*Humboldt's Aspects of Nature*.



1, *Spiraea grandiflora*
2, *Geranium pratense* flore pleno.



"Tis a fair sight, that vest of gold,
Those wreaths that August's brow enfold,
Oh ! 'tis a goodly sight and fair,
To see the fields their produce bear,
Waved by the breeze's lingering wing,
So thick, they seemed to laugh and sing,
And call the heart to feel delight,
Rejoicing in the bounteous sight,
And call the reaper's skilful hand
To cull the riches of the land."

ILLUSTRATIONS.

I. SPIRÆA GRANDIFLORA.

LARGE FLOWERED SPIRÆA.

THE name SPIRÆA is derived from *speirao*, to become spiral ; in allusion to the flexile branches being suitable for twisting into garlands. It is also called BRIDEWORT.

This elegant and interesting family of plants is composed of nearly an equal number of *hardy shrubs*, and *hardy herbaceous perennials*.

Our readers are familiar with some of the latter, especially the *Spiræa Ulmaria*, Meadow-sweet, or Queen of the Meadows, which abounds in moist meadows and woods, perfuming the air with the hawthorn-like scent of its abundant white flowers.

" Each dry entangled copse empurpled glows
With orchis blooms; while in the moistened plain
The meadow-sweet its luscious fragrance yields."

The SHRUBBY section of Spiræas are elegant blooming, and flower in profusion, also most of them are handsomely formed bushes. The one we now figure is a valuable acquisition to them. Mr. Fortune met with it in Northern China, and sent it to Messrs. Standish and Noble, nurserymen, of Bagshot, under the name of *Amelanchier racemosa*. It is quite hardy, and bloomed there this season. It forms a branch-

ing, twiggy, bushy plant of medium size, and blooms in profusion in terminal erect racemes.

Its numerous *large* white flowers are very showy, and render it highly ornamental, worthy of a place in every bed or border of shrubs.

"Peaceful and lowly in their native soil,
They neither know to spin or care to toil;
Yet with confest magnificence they shine."

The collection of *shrubby* Spiræas in the Royal Gardens, at Kew, comprises many that are particularly handsome and ornamental, some being in bloom as early in the spring as April, and are succeeded by others to the end of summer. A descriptive list of the best, of which we have taken notes, will appear next month.

II. GERANIUM PRATENSE FLORE-PLENO.—An *herbaceous* perennial plant, which grows about 18 inches high, and forms a close, neat bush, blooming *very profusely*. The plant from which we had our specimen is about 18 inches across, and had upwards of five hundred blossoms. They are produced in terminal branching panicles bearing a succession of DOUBLE FLOWERS for a long period. The plant is of free growth, and well deserves a place in every flower garden. It is a native of Scotland, and in but few collections (of *this class of plants*) in England.

NOTES ON NEW OR RARE PLANTS.

BUDDLEIA CRISPA. *The crisped-leaved*.—This very handsome shrub was discovered by Major Madden, near Almorah, in Western Himalaya, who sent seeds to the Glasnevin Botanic Garden, Dublin. It proves to be as hardy as the well known *Buddleia globosa*, and if afforded the protection of being trained to a wall, it will bear our winters without injury, in any part of England. This new species will grow to the height of twelve to fourteen feet, branching, leaves four inches long and are long heart-shaped. The flowers are produced in long terminal *branching* spikes, forming a *pyramidal head* about five inches long. Each blossom has a narrow brown tube about one-third of an inch long and the front of the flower is nearly half an inch across, lilac with a white eye. The head of bloom contains a great number of blossoms, and a large plant in bloom will be highly ornamental. It blooms in the early part of the year, and the flowers scent the atmosphere very powerfully around with a delightful fragrance. (Figured in *Bot. Mag.*, 4793.)

CASSIOPE FASTIGIATA. (Synonyme, *Andromeda fastigiata*).—This very interesting small shrub was discovered by Major Madden, in North-Western Himalaya, where he found it growing abundant at elevations of from 12,000 to 13,000 feet. Seeds of it were sent to Mr. Moore, of the Glasnevin Botanic Gardens, Dublin. Dr. Hooker, too, found it in abundance in the mountains of Sikkim Himalaya, at as high an elevation as from 10,000 to 14,000 feet.

It is a small shrub, very much branched, and the leaves are *short* arranged along the shoots like tiles (imbricated in four rows, making the shoot four angled), and having a *white*, silvery eye-lash like edging. The branches are somewhat drooping. The flowers are bell-shaped, *drooping*, about one-third of an inch long, and half an inch across the front of the blossom. They are *white*, produced towards the ends of the shoots from one to six blossoms in each cluster. It is exceedingly pretty and interesting: such large flowers and small foliage produce a striking appearance. It will become a general favourite; would be valuable for a rock-work, or the front of a bed of American shrubs, &c. (Figured in *Bot. Mag.*, 4796.)

CATASETUM NASO, VARIETIES.—The *C. Naso* is a native of Caracus. The two following *varieties* have bloomed in the orchid stove at Sion Gardens, and are figured in the *Bot. Mag.*, 4792.

Variety 1.—The flowers are borne on erect spikes, drooping, somewhat bell-shaped, two inches long, green, yellow and white, intermixed, and numerously spotted in bars, with a rich black purple.

No. 2.—The flowers are a little larger than those of No. 1, and expand more openly. The sepals are broad, green, beautifully spotted with black purple. The petals are green with a broad margin of purplish-red, and having large black spots. The labellum is of a purplish-red with a streak of white round the eye. Both the varieties are pretty and very interesting.

CLEMATIS BARBELLATA. THE BEARDETTE TRAVELLERS' JOY.—This singular species is a native of the Western Himalaya, where it was first detected by Mr. Royle and Mr. Pakenham. And Major Madden sent seeds of it to the Glasnevin Botanic Garden, Dublin, where it has bloomed, and proves quite hardy. The plant is a climber, vigorous, and a free bloomer. Each blossom is drooping, and forms a large bell-shaped flower of four petals, the tops of which recurve outwards.

THE PRODUCTION OF PLANTS BY HYBRIDIZATION,

BY THE EDITOR OF THE MAGAZINE OF HORTICULTURE AND BOTANY.

OUR object at this time is to introduce to the attention of amateurs, who are interested in the hybridization of plants, the views of a cultivator, which we find in M'Intosh's *Book of the Garden*, now issuing in numbers from the press.

We are but just beginning to appreciate the importance of this art in the production of new varieties, both of fruits and flowers; very few among our cultivators have attempted the work carefully and scientifically, and therefore we have few or no reliable experiments to refer to. But we know this, that the chance seedlings which spring up in every garden, often prove much superior to the parents in the near vicinity; and such being the fact, why should not judicious hybridi-

zation, done with a view to produce certain results, accomplish all and much more than nature, left to its own caprices?

If every breeze which sweeps over a cornfield planted with various kind, will so distribute the pollen as to find all colours of the grain in a single ear, should we not see and admit the vast results which may be accomplished by the hand of man, guided by science, in effecting changes in this and other plants? Indeed we have as yet but just begun to learn the great alterations which may be made in certain families of plants,—the highly ornamental character which may be given to others, and the improvement to be effected among our choicest fruits and vegetables. Followed up with attention and perseverance, as certain improvements may be made in fruits and plants, as the same care and perseverance have made improvements in the breeds of cattle. The Diana and Concord grapes are sufficient evidence to show how great are the changes of a single generation of accidental origin; and our seedling strawberries, the Boston Pine and Hovey, are equally good evidence of what thorough and complete hybridization will effect by bringing two ordinary varieties together.

We shall have some experiments to detail hereafter; but now, as the season is approaching when hybridization may be effected, especially among plants, the following remarks on the *modus operandi* of the process will be found exceedingly interesting:—

To those who would attempt the hybridizing or cross-breeding of plants, I will now offer some suggestions for their guidance.

It is an *essential* element to success that the operator be possessed of indomitable *patience, watchfulness, and perseverance*. Having determined on the subjects on which he is to operate, if the plants are in the *open ground*, he will have them put into pots, and removed under glass, so as to escape the accidents of variable temperature—of wind, rain, and dust, and, above all, of insects. A greenhouse fully exposed to the sun is best adapted for the purpose, at least as regards hardy and proper greenhouse plants.

Having got them housed, secure a corner where they are least likely to be visited by bees or other insects. The plants which are to yield the pollen, and the plants which are to bear the seed, should be both kept in the same temperature; but where this cannot be managed, pollen from an outside plant, in *genial* summer weather, may be used, provided it can be got; for there is a class of insects which live exclusively on pollen, and devour it so fast after the pollen vessels open, that, unless the plant is under a hand-glass (which I would recommend), it is scarcely possible to get any pollen for the required purpose. To secure against chances of this nature, a sprig with opening bloom may be taken and kept in a vial and water inside, where it will get sufficient sun to ripen the pollen. But here, too, insects must be watched, and destroyed if they intrude. An insect like, but smaller, than the common hive bee, which flits about by fits and starts, on expanded wings, after the manner of the dragon-fly, is the greatest pest, and seems to feed exclusively on pollen. The hive bee, the humble bee, and wasp

give the next greatest annoyance. All these may be excluded by netting fixed over apertures from open sashes or the like. Too much care cannot be bestowed on excluding these intruders, whose single touch, in many cases, might neutralise the intended result; for the slightest application of pollen native to the parent plant, is said by physiologists to supersede all foreign agency, unless, perhaps, in the crossing of mere varieties; and the truth of this observation consists with my own experience. Without due precaution now, the labour, anxiety, and watchfulness of years may issue in vexation and disappointment.

As a further precaution still, and to prevent self-fertilization, divest the blooms to be operated on not only of their anthers, but also of their *corollas*. Remove also all contiguous blooms upon the plant, lest the syringe incautiously directed, or some sudden draft of air, convey the the native pollen, and anticipate the intended operation. The corolla appears to be the means by which insects are attracted; and though, when it is removed, the honey on which they feed is still present, they seem puzzled or indifferent about collecting it; or if, haply, they should alight on the dismantled flower (which I never have detected), the stigma is in most cases safe from their contact.

It will be some days—probably a week or more, if the weather be not sunny—ere the stigma is in a fit condition for fertilization. This is indicated in many families, such as *ericaceæ*, *rosaceæ*, *scrophularinææ*, *aurantiaceæ*, &c., by a vicious exudation in the *sutures* (where these exist) of the stigma, but generally covering the entire surface of that organ. In this condition the stigma may remain many days, during which fertilization may be performed; and this period will be longer or shorter, as the weather is sunny, or damp, or overcast.

In certain families, such as the *Malvaceæ*, *Geraniaceæ*, &c., where the stigma divides itself into feathery parts, and where the viscous process is either absent or inappreciable by the eye, the separation of these parts, the bursting of the pollen, the maturity of the stigma, and all which a little experience will detect, indicate the proper time for the operation, sunny or cloudy weather always affecting the duration of the period during which it may be successfully performed.

As to the proper *time* and *season* best adapted for such experiments, a treatise might be written; but here a few remarks must suffice.

As for the *season of the year*, from early spring to midsummer, I would account the best period; but, as I have just observed, I regard all cold, damp, cloudy, and ungenial weather as unfavorable. On the other hand, when the weather is *genial*, not so much from sun heat as at times occurs from the atmosphere being moderately charged with electricity, when there is an elasticity, so to speak, in the balmy air, and all nature seems joyous and instinct with life, this, of all others, is the season which the hybridist should improve, and above all if he attempt muling.

The hybridist should be provided with a pocket *lens*, a pair of wire *pincers*, and various coloured silk threads.

With the *lens* he will observe the maturity of the *pollen* and the

condition of the *stigma*, whether the former has attained its *powdery*, and the latter (if such is its nature) its *viscous* condition. If he find both the *pollen* and the *stigma* in a fit state, he will, with the *pincers*, apply an anther with ripened pollen, and by the gentlest touch distribute it very *thinly* over the summit of the *stigma*. The operation performed, he will mark it by tying round the flower-stalk a bit of that particular coloured *silk thread* which he wishes to indicate the particular plant which bore the pollen, and at the same time tie a bit of the same silk round the stem of the latter, which will serve till recorded in a note-book, which should be kept by every one trying experiments on a large scale.

It would be out of place here to give even a general outline of the parts of flowers, to show how these differ the one from the other in various tribes of plants. The experimenter, if he is not a botanist, and even though he is partially acquainted with the science, must, from books and observation, make himself familiar with the various organs, male and female, of each separate family of plants on which he means to work, otherwise he will be often puzzled where to find them, or even to distinguish the one from the other.

As for the *time of the day*, it may be done almost any hour from 9 A.M. till 4 o'clock P.M., and with equal success. My other avocations have often limited me to earlier and later hours; but I would suggest from 10 till 2 o'clock as the best time of day, always preferring fair, genial and sunny, to chill, damp, or cloudy days.

On recurring to my note-book for 1850, I find a very favourable state of atmosphere occurred in the beginning of March of that year, when I crossed the *Phyllodoce* (*Menziesia*) *cærulea* with the *Rhodothamnus* (*Rhododendron*) *chamæcistus*, sowed on the 18th June that year, as above noticed. At this time, too, I succeeded in crossing the above *rhodothamnus* with a large-leaved, white-flowered Nepal *species* of *rhododendron*, the blooms of which were two inches across the limb. But though I ripened that season three or four pods of this last cross, each pod of seed beautifully ripened, all of which I sowed, I cannot assert that any one seed vegetated; and though it is now nearly three years since the seeds were sown, I still preserve the seed-pot. And I may remark here, from my own experience, that two years is not too soon to despair of vegetation even of seeds from abroad, on which, of course, no cross had been effected.

Few seasons have occurred so favourable for the hybridist as the short interval in the beginning of March, 1850, above alluded to. Singularly enough, happening to visit Lord Rosslyn's gardens at Dysart House, on the 1st of June that year, with the late Professor Dunbar, Mr. M'Intosh (the author), and Mr. Sprott, I observed the above *rhodothamnus* marked as crossed. I found it had been crossed at the above period, and with *Rhododendron arboreum*! The seed-pods were then fully swollen, and approaching maturity; but I have not heard that anything has come of them.

It is quite unnecessary to offer any directions as to the results to be

effected. If it is desired to reproduce the larger, finer formed, or higher coloured bloom of a plant having a tall, straggling, or too robust a growth, or having too large or too coarse foliage in a plant without these drawbacks, I need not suggest to select, in another species of the same family, a plant of an opposite character and properties—say of dwarf, compact growth, handsome foliage, and free flowering habit; and if such can be obtained, work with it, making the latter the seed-bearer. Or, if it be desirable to impart the fragrance of a less handsome kind to another more handsome, I would make the cross upon the latter. I cannot speak with certainty from my own experiments how far perfume may be so communicated; but I have some things far advanced to maturity to test it; and I entertain the hope that fragrance may not only be so imparted, but even heightened, varied and improved. Or if it be desired to transfer all, or any valuable property or quality, from a tender exotic species to a native or hardy kind, work upon the latter; for so far as constitution goes, I agree with those who hold that the females overrules in this particular. I would offer this caution to those who wish to preserve the purity of certain flowers for exhibition, especially those having white grounds, not to cross such with high-coloured sorts. I once spoiled a pure *white* bloomed *Calceolaria* for exhibition, by crossing it with a *crimson* sort; all the blooms on those branches where the operation had been performed, being stained *red*, and not the few flowers merely on which the cross was effected.

In this note, already too long, I cannot further illustrate my remarks by recorded experiments in the various tribes upon which I have tried my hand; but I cannot leave the subject without inculcating, in the strongest manner, the observance of the rules I have laid down to prevent vexatious disappointments. If any doubts arise about the cross being genuine or effectually secured, let not the seeds be sown. Three, four, five, and even six years, must oftentimes elapse with trees and shrubby things ere the result can be judged of; and if eventually it prove a failure, or even doubtful, it is worse than labour lost, inasmuch as it may mislead. If there is no great departure from the female parent, the issue is to be mistrusted. It is singular, if well accomplished, how much of both parents is blended in the progeny. Gentlemen eminent as physiologists, have read nature's laws in these matters a little differently from what my own humble experience has taught me, and assigned to the progeny the constitution and general aspect of the *one* parent, while they gave the inflorescence and fruit to the *other*. I have crossed, and inverted the cross, and can venture to give no evidence on the point, except, perhaps, as to *constitution*, to which the seed-bearer, I think, contributes most. A well-managed hybrid should and will blend both parents into a distinct intermediate, insomuch as to produce often what might pass for a new species. If the leaning be to one more than another, it is probably to the female, though this will not always be the case.

Again, it is asserted that a proper hybrid—i.e., one species which

is crossed with another species, which is separate and distinct from it—will produce no fertile seeds. This does not accord with my observations. Dr. Lindley has remarked very justly (*Theory of Horticulture*, p. 69), "But facts prove that undoubted hybrids may be fertile." My hybrid, *Veronica Balfouriana* (an intermediate between *V. Saxatilis* and *V. fruticulosa*), seeds, I would say, more abundantly than either parent; and the progeny, from its self-sown seeds, I find to be of various shades of blue, violet, and red, rising in my garden, some having actually larger, finer, and higher-coloured blooms than the parent bearing the seed; and I am familiar with the same result in other things. Yet I am far from asserting fertility in the produce between two members of allied but distinct genera—such, for example, as in the *Brianthus*, which I have found to be unproductive, whether employed as the male or female parent. As above conjectured, its parents were far too remote in nature's own arrangement. The hybridist has a field before him ever suggestive of new modes of acting. He may try, as I have done, what may be effected under various tinted glass. My persuasion is, that I effected from a pale yellow a pure white-grounded calceolaria, by placing the plants under blue-shaded glass, by which the sun's rays were much subdued. He may also apply chemical solutions to plants with ripening seeds. Nature, in producing, as it sometimes does, plants with blooms of colours, opposite to those of the parent, must be governed by some law. Why may not this law be found out? For example, under what influences was the first white fuchsia, the *F. Venus Victrix*, produced, the purest yet of all the race, and the source from which all the whites have been derived?

While I have necessarily confined the above remarks to things proper to the flower garden, a wide and still more important field lies beyond. The late lamented Mr. Knight, of Downton, did much in this way to improve our garden fruits and other esculents, and with a success that none else, so far as I am aware, has since attained. Why should not these efforts be extended to the improvement of *agricultural* as well as horticultural productions? Why not carry them into *field* and *forest*, to the creation of new, more useful, and more elegant forms? Nature is boundless, and its objects are endless; and this subject, of all others connected with plants, the most engrossing and exciting. Rich results await the intelligent experimenter; but I would advise none to embark in the pursuit who have not sufficient leisure to devote to it, and, as I said before, who are not possessed of indomitable patience, watchfulness, and perseverance, with a fixed determination not to be fretted or discouraged by frequent failures.

ON THE MANAGEMENT OF HOT-HOUSE PLANTS IN WINTER.

BY A PRACTICAL GARDENER.

ALL plants are naturally subject, in a certain extent, to the vicissitudes of winter, spring, and summer. It follows, therefore, that, in a state of

cultivation, something analogous should be followed by the cultivator in imitation of those changes. To keep tropical plants at a high temperature during winter, when there is little sunshine, is to excite their growing principle at a period when they should rather be at rest; and where such a practice is followed, the plants become drawn up, weak and leafless, in consequence of the perpetual, or, we may say, in this instance, unnatural, stimulus to excitement which the application of heat produces. It appears, from practice and observation, that the temperature of the plant stove should be kept as near to from 60 to 65 degrees as possible during the dark days of winter, for all that is then required is to prevent the plants from being checked or chilled by cold during that season; so that, as spring naturally comes on, a further, but gradual, stimulus may be given them by additional heat, and most particularly during the day.

Water must not be entirely withheld, particularly from some species; but a much less quantity of it is necessary than when the plants are in a growing state, and able to decompose a greater portion of that element. Some species require none for several weeks together; and such may be ascertained by their habits of growth, and are of the herbaceous and bulbous sorts. As these naturally ripen their foliage in autumn (or at whatever other season), and appear to die down to the ground, they should be observed, and collected as near together as circumstances will admit of, and a suspension of watering should then gradually take place, and be continued in till they begin to show signs of vegetation in spring, when they should be again supplied as usual. Some species, which require very little water during winter, do not lose their leaves, nor die down to the surface of the pots; but it is only observation on the part of the cultivator that can direct him in these instances when to water, and when to withhold it. It is (as we have repeatedly observed) one of those cases in horticulture for which rules may be laid down, but not wholly without exceptions, and must entirely rest on the judgment of the cultivator. Steaming the stove during winter is a material feature in the best management of such plants, and should be scrupulously attended to, both to soften the atmosphere of the house, as well as to prevent the increase of insects, particularly the red spider, which is sure to make its unwelcome appearance in a high and dry atmosphere. The most eligible time for steaming the house is in the evening, when the flues are hottest, and it is performed by pouring water on them, which generates steam readily. In time of severe frost, this operation may be performed during the day, or dispensed with for a few days altogether. The quantity of water required to produce a sufficiency of steam depends on a variety of local circumstances, such as the size of the house, the way in which the water is put on the flues, &c.; but it may be safely asserted, that more than is necessary is often used when it is poured on them by random, or done in too hurried a manner. In steaming all sorts of hot-houses, as well as in their whole management, it can only be expected to be well done when the operator feels an interest or pleasure in doing it. A few minutes

more spent in applying it regularly and leisurely over the whole surface of the flues will do more good than sluicing a hogshead of water over the house in a careless manner. During the winter months very little ventilation is required in these structures; for, unless the house be unusually well glazed, and in complete repair, a sufficiency of fresh air will find its way into it between the laps of the glass and other openings; indeed greater care should be had to the exclusion of cold air during winter than to its admission. The plants are, for the most part (as observed above), in an inactive state, and, therefore, not in want of those gases which compose certain parts of atmospheric air, and which are found so necessary for them when in a growing state.

RAISING SEEDLING RANUNCULUSES,

BY A BERKSHIRE CHAMPION.

Nor any flower that I am acquainted with composes such a bed of beauty as a well-grown one of this loveliest of all flowers. Their humble growth, exquisite form of flowers, variety of strikingly handsome colours, displayed in self-blooms, or edged, shaded, or beautifully spotted, together combine to produce a floral display beyond comparison.

I am but a ten years' amateur cultivator of ranunculuses, but each successive year I have become more enthusiastic with admiration of their beauties.

I procured, the first season, a packet of seed saved from *first-rate varieties*, by that estimable cultivator the Rev. Joseph Tyso; from that sowing I obtained a considerable number of plants, which have furnished several most exquisite beauties, of first-rate form and colours, and that rank in estimation as *first-rate* by florists in general. I have annually continued to sow seed, &c., and no part of the highly interesting attention required in cultivating flowers, is anything near so delightful as that of raising seedlings, and viewing for the first time the beauties of each successive flower. My method of treatment is as follows:—I must observe, however, that I yearly save seed from plants of my own growing, as well as procure a little elsewhere.

Ranunculus seed is to be procured from semi-double flowers; care should therefore be taken to save it from such as are possessed of good properties, viz., such as have full strong stems, a considerable number of large well-formed petals, and rich good colours, chiefly preferring the darker, but not to the exclusion of the lighter coloured when their properties answer the foregoing description. The seed should remain on the plant till it has lost its verdure, and becomes brown and dry, it may then be cut off, and be spread upon paper, in a dry room, exposed to the sun, that every degree of humidity may be exhaled from it, in which state it should be put into a bag, and preserved in a dry warm room till the time of sowing, otherwise it will be in danger of contracting a dampness, which will soon produce a mouldiness, that will infallibly destroy it. January is the proper time to sow the seed, and in order to prepare it, it must be separated from the stalks to which it is connected, in

the following manner, viz. :—in the first place it should be taken out of the bag and spread thin upon paper, tea tray, &c., and placed before a moderate fire, till it is just warm, and no more; the seed will then easily scrape off, by means of a penknife, but great care must be taken to avoid scraping it off in lumps, or suffering any pieces of the stalk, dried petals of the flower, or other extraneous matter to be mixed with it, which would create a mouldiness when sown, of very destructive consequence; when the seed is scraped in a proper manner it will have the appearance of clean coarse bran, with a little brown or purple speck in the centre of each cuticle, which is the kernel.

When the seed is thus prepared, it should be sown on a shallow frame provided with glasses, similar to those made use of for cucumbers and melons; the soil should have been previously taken out, three feet deep, and spread thin upon the ground till it has been perfectly frozen throughout, in order to destroy any vermin it may have contained. When the pit is filled up again with the frozen lumps of earth, it should remain till the whole mass has thawed, and subsided to its pristine bulk, or nearly so; its surface should then be made perfectly smooth and even, and the seed sown upon it with the utmost regularity, in such a quantity as nearly to cover it; the glasses should be placed over it immediately, and the frame kept closely covered with them, for two or three days, till the seed begins to swell and soften; a little light earth should then be sifted upon it, through a fine sieve, but not sufficient to cover it, this should be repeated once or twice a week, till the greater part of the seed disappears: it is proper to remark that such seeds as happen to be covered deeper than the thickness of a half-crown piece, will never vegetate, and must, of course, inevitably perish. It is necessary that the seed be kept moderately moist by gentle watering with soft water that has been exposed to the sun, but too much moisture is nevertheless injurious.

About the time that the plants begin to appear, it is requisite to stir the surface of the earth with a pin, just sufficiently to admit air, and give liberty to the young plants to pass easily through; this operation should be very carefully performed to prevent breaking off the fibres, or raising and leaving any of the plants out of the earth, because one hour's sun upon such would certainly destroy them.

After the plants are all up, and their two interior leaves appear, more air must be given, by having hurdles or lattice work, substituted for the glasses; waterings must be regularly continued in the manner before described, when the long continuance of dry weather renders it necessary; but fine warm showers of rain are always preferable when they happen in due time.

This kind of management is to be continued till the roots are matured, and fit to take up, which is known by the foliage becoming brown, dry, and nearly consumed. The roots are to be dried and preserved in the usual way, and to be planted the same time as large ones in the autumn, the greater part, or such as have two or more claws, will blow in tolerable perfection the following summer.

CULTIVATION OF INTERMEDIATE STOCKS

BY AN EXTENSIVE GROWER FOR COVENT GARDEN.

HAVING noticed on a recent number of this magazine an article on Ten-Week and other Stocks, and as the treatment of the *Intermediate* is not so particularly detailed as it ought to be, I send the following plain detail of the mode I have practised with the *best success* for the last seven years, never failing to have an extraordinary bloom.

In the first week of July, I sow my seed in a bed of rich light earth, in a situation screened from the mid-day sun, where I allow them to grow until the beginning of September, when I put them into sixty-sized pots separately; the soil that I use is a light sandy loam. In these pots they stand until the middle of October, when I repot them into forty-eight sized pots, in the same kind of soil as before; I then place them in a cool frame or pit, where they stand all the winter. I take care to give all the air possible, in order to keep the plants dwarf, and I uniformly dress the plants from all dead leaves, as this is a very essential thing in winter, and I never give more water than is really necessary to keep the plants alive; for if kept too wet they are very likely to damp off. About the middle of March they begin to show their blooming spikes. As soon as I can discern the single ones from the double, I separate them, and plant the single for seed in the kitchen-garden, so that I do not have any single ones in my beds or flower borders. Those plants I require for specimens, I repot into twenty-fours, and place them in the frame, again shading them from the mid-day sun, giving plenty of air and water, as they like to be kept moist at this season. I let them stand in the frame until April, when I plant my bed with those grown in forty-eights, about a foot apart, and in May I have my beds in one sheet of most vigorous scarlet bloom, and which at that early season very greatly adds to the beauty of the lawn; and those, too, growing in twenty-fours, are then in such complete profusion of bloom as amply to repay for the trouble of extra potting.

TREATMENT OF THE GLOXINIA MACULATA.

BY MR. WILLIAM HALE, GARDENER, THURSTONE HOUSE, HAMPFIELD, MIDDLESEX.

In the last month's number of this magazine I observe some excellent remarks on the cultivation of Gloxinias, as greenhouse plants. Reference was also made relative to the *G. maculata* requiring a higher temperature, but nothing was stated about the management of it. It is a noble species, so robust and firm as to appear of a *shrubby* character. Its neat-shaped flowers, thick in substance, of a French-white colour, with large dark spots inside, produced in spikes from eighteen inches to two feet long, or even more, are both beautiful and ornamental, and amply repay for any attention. I therefore submit to the readers

the method of treatment I have pursued with the *greatest success*, for the last fifteen years, and without a single failure. Each year I have been repaid with a fine show of flowers. *Gloxinia maculata* requires a strong heat to have the bloom in perfection, and as the general season of its blooming is late in summer, it consequently requires to be *forced* in order to bring it *forward* at the "early part of spring," and thus inducing it to have an *earlier* and *prolonged* period of displaying its lovely flowers.

It is a perennial herbaceous plant, and the stems, leaves, &c. die down every season after it has done flowering; and water must gradually be withheld till the soil is but *barely moist*, so that the tubers may have a period of rest, during which time the pots must be kept in the coolest part of the stove or warmest part of the greenhouse. Sometimes the tubers will push shoots soon after the tops have been cut down after bloom is over; when this is the case, such may be kept through winter in the greenhouse, for if in the stove, they would grow prematurely, and would not bloom satisfactory during winter or early spring, if they bloomed even at all; but being kept in the greenhouse, just alive, they may be potted off singly at the proper time the others are, which have not pushed at all. This operation with all must take place early in February. The plan I pursue is, to turn out the old pot of tubers entire, and carefully separate them. I use a compost of equal parts of good turfy loam, sandy peat, and a mixture of old dried cow-dung, gathered from a pasture field, and leaf mould forms the third part.

A liberal drainage is supplied, and the tubers being laid flat are covered about half-an-inch, one in each large sixty-sized pots, the end of the tuber from which the shoot pushes is raised so as only just to be out of sight, water is given just to settle the soil to the tuber, and the pots are placed in a hot-bed frame, or in the forcing pit, when the former is not ready, and where they have a gentle bottom heat; but little water is given till the shoots push, then it is gradually increased. By the first week in April, the plants require to be shifted into forty-eight pots, to be retained in the former situation, and by the middle of May, they will require to be repotted into twenty-fours, or very vigorous ones into twelve—and the ball of each is kept entire at the repotting. The plants are robust growers, and must be syringed overhead every morning and evening, and the underside of the leaves must be *forcibly* syringed twice a week, or more, to keep away the red spider, which are partial to this plant. I give the plants manure-water twice a week during the latter half of its *growing season*. By this method of treatment I have grown the plant so as to have the floral stem three feet high, and half the length was adorned by the large, charming, wax-like flowers.

In order to have a *bush* of them, I turn out several plants from the large sixty-sized pots into pans that are eight inches deep and eighteen across, placing the strongest plant in the centre, and the others at suitable distances round it. Specimens so large have a noble and

handsome appearance, and these, as well as singly grown, amply repay for every attention given. Just before the flowers at the lower part of the spike begin to open, I usually remove some of the plants into the greenhouse; these continue longer in bloom than those remaining in the stove—in fact, they bloom up to the end of autumn.

DOUBLE BLOSSOMED STOCKS, &c.

BY GULIELMA, OF CLAPHAM RISE, LONDON.

A GOOD deal of inquiry has been made by correspondents relative to the production of DOUBLE BLOSSOMED ten-week and other stocks, and how these were to be obtained to a certainty. I am sorry not to be able fully to satisfy the applicants on this point, but supposing that some remarks on the *origin of doubleness* may be useful to them, I forward the following particulars on the subject, calculating that when the cause is generally understood attention will be additionally given to it in a practical manner.

A highly concentrated state of the sap in plants induces the production of flowers, and before the petals, pistil, and stamens can be formed, it must be perfectly elaborated; thus perfected, they have a higher state of existence than the leaves, which is the lowest, stem petals, after which the pistil and stamens, and finally the fruits. This perfect elaboration can only be obtained by a due degree of light and height, &c.

When, however, double flowers are produced, it is generally by a change of the higher parts of the existence, of stamens and pistils into the lower state of petals, and the more the plant is checked by a poorer soil, and a sparing supply of water for a period, the more likely, by giving luxuriant food and treatment afterwards, to bring back the pistil and stamens to a grosser and lower stage of existence to petals, and thus produce double flowers. The greater the check given, the more powerful will be the effect of after luxuriance when shifted into a rich soil, placed in due heat, properly supplied with water and every requisite attention, with the greater vigour there will be a flow of crude sap, and the flower is not only then produced larger, but the crude sap has a tendency to lower the state of existence, and the stamens and pistils being higher in the scale of existence, are reduced to the more inferior condition of petals. Sometimes the scale of existence is so far reduced, that what had been originally the nucleus of a branch, but elevated by elaboration acting on the vital energy into the state of petals, stamens, and pistils, is not only reduced to petals and become double, but will shoot again into a branch, as we have had instances with Brown's Superbe, and other roses. The double *Lychnis diurna* has the stamens changed into red petals, and the pistil into green leaves, and the quantity of each greatly increased. In the *Rhododendron* the flowers are produced from the terminal bud of the shoot; if the summer and autumn have been warm,

the buds swells larger, and we have a branch of flowers instead of a branch of leaves the ensuing spring; but it is always difficult to say, till the bud is evolved, whether we shall have leaves or flowers. In raising double or full flowers from seed, therefore, we should carefully guide our attempts by experience; in procuring the seed, we must get it from the *most double flowers we can*, as the progeny always bears more or less resemblance to the parent. In the Dahlia the flower is not, strictly speaking, full; it belongs to the compound class, in which a great number of florets are arranged on one common receptacle; in single dahlias and other flowers of this class, the ray or outer row of florets has the petals fully evolved and coloured; in the florets of the centre or disk, the petal is only in the state of a small tube, inside of which the stamens are situated. Rich cultivation forces these tubes to assume the state of coloured petals; sometimes tubular, as in the quilled dahlias, and sometimes flosculose or flattened, as in others; sometimes the stamens are changed into petals, sometimes they are abortive, but generally both these and the pistillum are unchanged, and hence there is little difficulty in getting seed from dahlias. Plants that are full of double flowers at one time, when the plant is vigorous, will change and come more single when checked by bad weather, or when the plant begins to ripen and get woody. To return to the raising of seedling double flowers. Roses, Pinks, Carnations, and Ranunculus change the stamens only into petals, and sometimes these are only partially so in very full flowers, and seed is comparatively easy to be obtained from them; we should, as before observed, select from the fullest and best flowers. In the Anemone the pistils are changed into petals, the stamens unchanged; seed of these can, therefore, only be obtained from flowers not perfectly full, or by impregnating flowers nearly single, with a tendency only to fulness, with the anthers of full flowers. In Stocks and Wallflowers both stamens and pistil are changed into petals; seed cannot, therefore, be had from full flowers in these sorts, and the only resource we have is to save seed from those in which a tendency to fulness has commenced, by having a petal or two more than usual. In growing Stocks from seed they will be more likely to be double, if the plants are checked first by a deficiency of nourishment, whether of water or manure, and afterwards excited to luxuriance by a plentiful supply; and the greater the change, the greater the likelihood of success. Old seed, or seed dried, gives a check; we have had instances of old neglected seed, which had been reckoned very inferior when the seeds were fresh and new, come almost every plant double, when a little had been left over and sold when old. The seed for raising double flowers of any sort can *hardly be too old*, if it will grow at all; and the weak plants, first stunted and then luxuriated, will be found most successful; the seed should be sown on heat, and the weak plants *most cared for*. After flowers have once been produced double or full, the habit of coming double will be retained, if kept so by rich cultivation. When any variety has begun to sport, the plants should be raised off those individuals which have

not yet sported, as the sporting habit might become fixed; and this should be carefully guarded against, by propagating from those roots that show the fullest flowers. The double China Asters, Feverfew, Rockets, Daisies, &c., come double in the same way as Dahlias. The double Snapdragon is similar to the stock. Campanula, Cistus, the Thorn, and most other double flowers, are similar to the Rose. Thus, by attention, have many of our English plants been induced to produce double flowers, and so, no doubt, would be the result with others, both domestic and foreign, if attention was duly paid to the subject.

DESTROYING INSECTS.

BY MR. JAMES ROBERTS, GARDENER, WREST LODGE, ALLENDALE.

THE sudden and very opposite kinds of weather, for which the present season has been remarkable, has tended to the more than usual increase of insects that attack in-door plants. For many years I have most successfully escaped the ravages of those enemies by either wholly preventing their beginnings, or at the early stage of their attacks I routed or destroyed them. The following remarks on the subject I forward you, hoping they will be inserted in the AUGUST NUMBER, and thus prove of service to some who are contending with their adversaries.

The application of the liquids will not injure the foliage when applied as here directed.

In all the recipes for destroying the red spider which I have seen, sulphur is an ingredient; this, in its crude state, will not unite with the liquids used for that purpose, and therefore it can have little or no effect, except when applied as a wash on the heated flues of a house. In order to make it unite with soapsuds, tobacco water, and other liquids usually made use of for destroying insects, it must be converted into a sulphuret, by boiling it with lime or an alkaline salt, as in the following mixture, which expeditiously and effectually destroys the red spider, by merely immersing the plant or part infested in the mixture.

Common soft soap, half an ounce; sulphuret of lime, one ounce by measure, or two tablespoonsful; soft water (hot), one ale quart. The soap and sulphuret to be first well mixed with an iron or wooden spoon in the same manner as a mixture of egg and oil is made for a salad; the hot water is then to be added by degrees, stirring the mixture well with a painter's brush, as in making a lather, by which means an uniform fluid will be obtained like whey, without any sediment, which may be used as soon as it is cool enough to bear the hand in it.

This mixture will destroy every insect usually found in the greenhouse by mere immersion, except the coccus, or scaly insect, which adheres so closely to the stem or under side of the leaf, that the mixture cannot reach its vulnerable parts; therefore, in this case, the mixture must be applied with a brush that will dislodge the insect. If the mixture be put into a wooden bowl or any other shallow vessel, small

plants in pots, and the leaves and branches of larger ones, and of fruit trees, may be easily immersed in it by pressing them down with the hand.

The above mixture will not destroy the black aphides of the cherry-tree, nor the green aphides of the plum-tree, by immersing the leaves and branches of it, there being an oiliness on these insects which prevents its adhering to them. It will destroy them by applying it with a brush, but this is too tedious a process. It has been recommended by writers on horticulture to wash these and other fruit trees against walls, before the leaves and buds appear, with mixtures which cannot be safely applied after, for which purpose the above mixture, with the addition of spirits of turpentine, is likely to succeed as well as any other, or better; but I have not yet had an opportunity of giving it a trial. Half an ounce by measure of spirits of turpentine being first well mixed with the soap, and the sulphuret and water added as before; or the wash may be made stronger by adding twice the quantity of each ingredient to the same quantity of water.

For destroying slugs and worms there is no recipe so simple, attended with so little trouble, and, when properly applied, so effectual, as common lime-water. The plants on which the slugs are found must be watered with it twice at least, at an interval of three or four minutes. If you place three or four slugs on the ground, and pour lime-water on them from a watering-pan you will soon perceive them throwing off a kind of slough, and after that crawling away; but if you sprinkle them again with the lime-water they will not be able to throw off another slough, and soon die after the second operation. When a person has, therefore, watered as many plants as takes up the time of three or four minutes, he must turn back to the place where he began, and water them again.

Lime-water for this purpose may be easily made so as to be always ready. Into a trough, containing about 55 gallons of water, throw in two or three shovelful of lime, stir it up three or four times on that day, and the next day the liquor is clear and fit for use, and will continue to answer the purpose for some time without adding any fresh lime by stirring it up again before it is used, and let it settle. If the lime-water be of sufficient strength it will destroy the large grey snail with twice watering, and all worms that are out of the ground at the time of watering, and it will not injure the most tender plant when used in a clear state.

MISCELLANEOUS.

THE METROPOLITAN HORTICULTURAL EXHIBITIONS OF 1854.—Six of these great meetings have been held during May and June. The specimens shown in the immense number of collections were, as a whole, superior to those of any previous years; a poor specimen of either plant, flower, or fruit, was not among them. To give, however, a full detailed account of all, would be to fill our pages with this one

subject; and there would be a repetition of the same collections of plants—as many of them which had been seen at Chiswick, were shown at the Regent's Park Botanic Garden—and that, not only once, but nearly the whole of some collections appeared a second time at the same place. We shall therefore give, as we have done the last two years, a description of the principal collections of each class, that our readers may see what are still the *leading plants* for exhibiting, and of the *new plants*, also noting other things which may rank as curiosities.

CHISWICK, MAY 13th.—*Collections of 20 Stove and Greenhouse Plants.*—1st. Mr. Green, gardener to Sir E. Antrobus, Bart., of Cheam. *Aphelexis macrantha purpurea*, *Aphelexis rosea*, *Azalea Iveryana*, *Azalea variegata*, *Daviesia latifolia*, *Dillwynia ericifolia*, *Erica depressa*, *Erica propendens*, *Eriostemon intermedium*, *Franciscea acuminata*, *Franciscea confertiflora*, *Gardenia Fortunei*, *Gompholobium grandiflorum*, *Gompholobium barbigerum*, *Ixora crocata*, *Leschenaultia formosa*, *Pimelea Hendersonii*, *Pimelea spectabilis*, *Polygala acuminata*, *Polygala cordifolia*.

2nd. Mr. Gilham, gardener to R. Scott, Esq., of Leyton. *Allamanda cathartica*, *Allamanda neriifolia*, *Aphelexis macrantha purpurea*, *Azalea double-red*, *Azalea Duke of Devonshire*, *Chorozema varium nanum*, *Clerodendron Kämpferi*, *Epacris paludosa*, *Erica Cavendishii*, *Erica vestita alba*, *Eriostemon buxifolium*, *Eriostemon neriifolium*, *Ixora coccinea*, *Leschenaultia Baxterii*, *Pimelea decussata*, *Pimelea Hendersonii*, *Polygala Dalmaisiana*, *Statice Holfordi*, *Vinca oculata*, *Vinca rosea*.

The following additional plants to the above were exhibited in other collections of this class:—*Aphelexis humilis*, *Azalea Duke of Devonshire*, *Azalea triumphans*, *Boronia spathulata*, *Cyrtocera reflexum*, *Dracophyllum gracile*, *Epacris grandiflora*, *Erica ventricosa densa*, *Eriostemon scabrum*, *Pimelea decussata angusta*, *Polygala oppositifolia*, *Boronia tetrandra*, *Chorozema Lawrenceana*, *Erica Alberti*, *Erica Brunioides*, *Leschenaultia Baxterii*, *Oxylobium pultenae*, *Pimelea linifolia*, *Tetralthea verticillata*, *Azalea laterita*, *Ixora coccinea*, *Polygala cordifolia*, *Stephanotus floribunda*, *Adenandra speciosa*, *Chorozema Henchmanni*, *Medinella Sieboldi*, *Hoya bella*, *Hoya carnea*, *Medinella speciosa*, *Medinella magnifica*.

Any person desirous of forming a collection of valuable flowering stove and greenhouse plants may safely rely on the above being suitable.

INDIAN AZALEAS.—These filled up a large space, and displayed an unrivalled blaze of floral beauty, producing an effect we cannot describe.—1st. Messrs. Lane, of Berkhamsted for 12 plants. *Perryana*, *exquisita*, *Fielder's White*, *conspicua purpurea*, *speciosissima*, *triumphans*, *Double-red*, *alba magna*, *grandis*, *infrabilis*, *punctata*, and *Broughtonia*.

2nd. Mr. Green, of Cheam, for 12 plants:—*Symmetry*, *laterita*, *coronata*, *Gledstanesi*, *decora*, *optima*, *Perryana*, *Rawsoni*, *variegata*, *triumphans*, *Prestantissima*, and *sinensis*.

The following were also shown in other collections:—Iveryana, Dilecta, Murrayana, Minerva, Leeana, and Grieswoodiana. The variety Iveryana, white with rosy purple, or violet stripes, was particularly beautiful, as well as being large and of fine form. We will give a *descriptive* list of all the finest kinds of Azaleas in our next number, as a guide to purchasers; all the above, however, are first-rate, and very distinct, adapted for any collection.

PELARGONIUMS.—The season being backward, but few were shown; the following were fine:—1st. Mr. Dobson, of Isleworth, for 12 plants. *Purpurea*, *Ambassador*, *Vulcan*, *Rosamond*, *Delicatum*, *Vanguard*, *Gulielma*, *Arethusa*, *Governor*, *Glowworm*, *Harriot*, and *Leah*.

FANCY CLASS.—1st. Mr. Mockett, for 6 plants:—*Richard Cobden*, *Cleopatra*, *Defiance*, *Jehu Improved*, *Princess Alice Mande*, and *Captivation*.

2nd. Mr. Gaines, of Battersea, for 6 plants:—*Signora Castoni*, *Defiance*, *Queen Superb*, *Madame Rosati*, *Delicatum*, and *Electra*.

FINE SINGLE SPECIMEN PLANTS. — *Gompholobium polymorphum*, *Ixora coccinea*, *Adenandra fragrans*, *Erica depressa*, *Azalea Iveryana*.

LISIANTHUS RUSSELLIANUS.—*Clericus* may grow and bloom this beautiful flowering plant in splendid perfection by the following method of treatment. Sow the seeds in April, in fine soil, and place the tops of the pots very near the glass. As soon as the plants are up enough to transplant, remove them so as not to break a single fibre, especially the point of the principal, which is tap-rooted. The pots must be half filled with *Sphagnum* moss, then filled up with good loam and peat, or leaf mould, equal parts. The pots then to be plunged up to the rims in a cucumber bed, and as near to the glass as convenient. As they require larger pots, the same plan is to be adopted till they show for bloom, when they may be placed in the plant-house.

GREEN FLY.—My Roses in pots are much infested with green fly. How can I soon and effectually destroy them, and not injure the young shoots? asks an Inquirer lately; I therefore state, pursue the following methods. From the *tobacconist's*, tobacco-water may be procured at a shilling per gallon; in it dip the shoots, and the insects will immediately perish; it does not in the least degree injure the plant. If to sprinkle over the heads of plants indiscriminately, the tobacco-water should be diluted, by mixing with it an equal quantity of water. Or bruise a quantity of common laurel leaves, then boil them, and when the decoction is cool, use it as recommended for tobacco-water. Care must be taken to have the liquid applied also to the *under side* of the foliage.—L.

MANAGEMENT OF DIPLADENIAS.—The most suitable soil for these twiners is good *fresh turfy loam*, *leaf soil* and *fibrous peat*, in about equal proportions, with a liberal admixture of sharp sand and lumpy pieces of charcoal to keep the mass open and porous. It is a good practice to slightly bake the leaf soil before using it, so as to destroy any worms it may contain, which are very mischievous to plants in bottom-heat. About the middle of January, turn the plants out of the pots and shake

away a part of the soil, at least as much as will admit of a portion of new compost if the plant be put again into the same pot, or at most one of a size larger. At this time cut back the lateral shoots, so as only to leave one or two buds on each. After potting, place the plants in a pit or house where the atmosphere is kept *warm* and *moist*, and to have *full light*. It must also be plunged in a brisk *bottom-heat*, say from 70 to 80 degrees. It must also be syringed overhead every morning and evening, and when the foliage is produced the leaves must be syringed at the under side once a day, to keep off the red spider, to whose attacks these plants are liable. When the plant begins to push shoots, increase the supply of water at the roots in proportion to growth. As the shoots advance, keep them regularly tied to supports, in order to prevent their being broken; and, as soon as the roots get good well hold of the soil, shift into the flowering pots, which should not be larger than 12-inch ones. Return the plants after shifting to a brisk *bottom-heat*, and maintain a warm moist atmosphere, to induce active growth. Decide upon the method of training to be adopted at once, and keep the shoots regularly tied in, placing them sufficiently far apart to insure the production of strong short-jointed wood, and to induce the formation of side shoots, upon which the flowers are borne. Whilst it may be desirable to insure active growth, give a liberal supply of manure water to the soil and syringing overhead and maintaining a moist warm atmosphere; but avoid much shading, the only result of which is to induce the production of soft spongy wood, from which flowers can hardly be expected. When a good-sized plant is obtained, unless it begins to show for flowering, give less water at the root, and a freer circulation of air, with full exposure to sunshine, which will check the tendency to growth, and assist in inducing the formation of flowers. The specimens may be removed to a close part of the conservatory while in bloom, where they will flower in great perfection for some two months, but care must be observed to prepare them for the change by rendering it gradual. And specimens intended to be removed to the conservatory while in flower should be started into growth early in spring, so as to have them in flower in June, in which month the temperature of the conservatory will, with a little care as to placing them in the warmest corner, be suitable for them; but plants blooming late in autumn must be afforded the temperature of an intermediate house. Give a liberal supply of manure-water to the soil during the blooming season, and carefully guard the blossoms from the effects of damp, by which they are very easily injured. When the beauty of the specimens is over, remove them to a light airy part of a house, giving a sparing supply of water to the soil; and when the wood is well ripened, discontinue the application of water altogether during the period of rest, which should not be less than six weeks or two months. By annually shaking the greater portion of the old soil from amongst the roots, so as to allow of repotting in fresh soil, trimming away any unhealthy roots, and properly cutting back the shoots, the specimens will last for several seasons.—(*Magazine of Horticulture and Botany*.)

FLORAL OPERATIONS FOR THE MONTH IN THE FLOWER GARDEN.

IF the weather continue hot and dry, it will be highly necessary to administer copious supplies of water. This should be done towards the evening of each day, because the plants have then time to absorb the water gradually, and appropriate such portion as contributes to their well-being. It is only in extreme cases that water should be given in the morning, because it is then so quickly exhaled from the soil, as well as the leaves, that its refreshing and nutrimental properties are almost wholly wasted. A sprinkling over head very early in the morning will always benefit the plants, by assisting them to sustain the hot and dry winds. Rain-water is best, or that from an exposed pond or tank. Where beds of plants have been repeatedly watered through a rose, the surface of the soil will probably have become *crusted* and almost *impervious* to moisture; consequently, they ought to be stirred over occasionally with a small fork. A few annuals, as *Mignonette*, &c., may now be sown to bloom in the autumn, also biennials to bloom next year.

FLORISTS' FLOWERS.—*Auriculas* and *Polyanthus* should be kept in the shade. At this season of the year the plants are often attacked with green fly; dip the plants in a solution of tobacco-water. *Tulips* will have perfected their growth, and should now be taken up. *Ranunculus* will require to be taken up as soon as their foliage has become withered and dry. *Pinks* may still be pipped. *Carnations* and *Picotees*: as the pods are fully formed and ready to open, secure them round with a ring of India rubber, gutta-percha, or bass, to prevent their bursting on one side. When blown, they should be shaded. Never suffer the plants to flag for want of water. Proceed with layering. *Dahlias* will require *thinning out* freely as they advance in growth. If sprinkled overhead with soft water late in the evening, with a fine rose or syringe, their luxuriance will be greatly promoted. *Pelargoniums* that have shed their flowers should be cut down, disrooted, and potted in smaller pots, keeping the plants for a week in a close frame, to assist them in developing their new shoots, and cuttings may be put in, one in each 60-sized pot, or prick them in a border, and pot as soon as rooted. *Roses* may now be budded; moist weather being best for the operation. It is of importance that there should be a resemblance between the bud and the stock, as to the vigour of vegetative growth, in order to ensure a successful result. If a Rose of slow development is budded on a rampant briar, and all the strength of the latter is turned into the parasitical stranger, health cannot be maintained, nor will a freely vegetating Rose submit to be impeded in its progress by a sluggish stock. Thin away surplus branches from all stocks not budded as early as possible, not to wait a day even, but get the branches strong and healthy.

IN THE FORCING STOVE.

Where stove and greenhouse plants afford suitable cutting, propagation must now be pursued; as, generally speaking, it can be practised with the greatest success in the early rather than in the latter part of the year. It should be remembered that the propagation of most plants is facilitated by the employment of bottom-heat and bell-glasses. Stove plants will derive great advantage from a partial shading during the glare of the day, and will be less liable to injury from drought. Many plants will require shifting, such as *Justicias*, *Clerodendrons*, &c. Give plenty of water at the roots, syringe often in the evening, and keep the floors of the house and every part damp, to assist in maintaining a humid atmosphere. Bulbs of *Amaryllis*, &c., should be put together in a pit or frame, where they will be near

the glass, and where the influence of the sun, with a gradual diminution of water, will mature them. Never permitting the foliage to flag is a good criterion as to the quantity of moisture plants require; keep as near that state as possible.

IN THE GREENHOUSE, &c.

As a free ingress of air must necessarily be permitted during fine weather, its rapid circulation, conjoined with active solar heat, must cause a rapid evaporation both from the plants and soil; hence there exists a necessity of watering and syringing frequently. Encourage the growth of Azaleas and Camellias by keeping them comparatively close (with shade during sunshine), and supplying them liberally with moisture administered by the syringe. Propagate Roses by cuttings from those plants which have been forced, and place the plants in a rather shady situation, in order that they may have a period of rest for a few weeks. Calceolarias that have ceased blooming should be repotted; cut off dead tops, place the plants in a situation where they can be shaded from hot sun, admitting it morning and evening. Seed should be sown, so as to have the plants strong, to endure winter; such will bloom next season, and be much more vigorous than plants raised from cuttings. Cinerarias also that have done blooming should have the tops cut off, and fumigated in a close frame, as they are often affected with green-fly; after which the plants should be turned out of the pots, and planted in a somewhat shady bed of good soil, in the garden. Sow seed now; the young plants will bloom early next spring. Epacrises, Ericas, &c., now done blooming, may be cut in, to render them bushy. Chrysanthemums should now have the leads stopped, to cause the production of side shoots, and make the plants bushy and dwarf. Procure a stock now of any required. Greenhouse plants placed in the open air in pots should have frequent waterings at the under side of the foliage, to destroy or keep down green-fly.

BRIEF REMARKS.

ON WALLFLOWER AND STOCKS.—It will greatly oblige a great many readers of your most useful work to inform them which is the best way of protecting the double wallflower and stocks from the frosts in winter, as most of us are partial to these beautiful flowers; and most of us would like to know your opinion which kinds of stock are the finest bloomers, and which come the most double, also which is the best time to sow the seed of stocks to bloom in the best season. It will greatly oblige to give us information in your next number.

R. H. P.

[Our correspondent has not been explicit enough as to his purposes: we beg, however, to inform him that to have early blooming stocks the tribe of Brompton's furnish such, and to have later the Ten Weeks'. The former are biennial, enduring two years, the latter annual, or enduring only one year. The Brompton stocks should be sown the first week in June, and when strong enough be planted out; if to be out of doors through winter, put them off where to bloom, and protect in winter by furze branches, pricked closely round and tied together, laying four or six inches of dry leaves over the roots, and surrounded by the furze branches, to keep the leaves in proper bounds. Where there is the advantage of a cool but dry frame, some potted off at first, in small pots, and at the approach of winter placed in the frame, or the pots sunk in the ground, close under a well-sheltered south-aspected wall, &c., will generally be preserved in any part of this kingdom. Such should be transplanted, entire, by the end of March, in the situations for blooming. There are a variety of colours. The Giant is a noble red one, as is the Emperor too, both red and white kinds. We have seen spikes of flowers two feet and a-half long, and a separate blossom two inches across. These come into bloom, as do the other varieties, at the end of April, and continue to a late period in summer. The annual stocks, viz., Ten Weeks', Russian, German, &c., are of course raised by an early spring sowing, and transplanted out as early as possible; these come into bloom by the middle of June, and continue to September. There are numerous colours of these tribes, all well-deserving cultivation. Wallflowers are readily preserved uninjured, in the same way as recommended to be adopted with Brompton stocks.—
—AN OLD CULTIVATOR.]

COMPOST FOR BEGONIAS.—In answer to the inquiry by MARIA, I forward the description of a compost I use with the best success. In it the plants grow just vigorous enough to produce a *profusion of bloom*, and not almost wholly, large foliage. I use equal parts of turfy loam, sandy peat, and *well decomposed* cow dung; this latter may be obtained in its *dry state* from a meadow, and rubbed into dust. I use a liberal drainage and a *liberal sprinkling* of bits of charcoal in the soil. Grown in this, with due attention to watering and syringing over head—morning and evening—in their growing season, they will flourish to satisfaction. After blooming, water must be *gradually withheld*, so that during rest the soil must be just moist.—A NOBLEMAN'S FLOWER GARDENER.

P.S.—I have the following new Begonias now in *fine bloom*:—*B. Prestonensis* in the greenhouse, with a profusion of large brilliant blossoms of a rich scarlet-red colour. It ought to be in every greenhouse or sitting-room window. So does *B. Martiniana*, with its large, deep rosy-pink flowers—in the green-house also. *B. miniata*, the habit is that of *B. fuchsoides*, but it blooms much more profusely. The flowers are borne in large drooping corymbs, of a rich orange-scarlet colour.—This will do in either green-house or stove. *B. Thwaitesii*: its blossoms are not quite expanded, the leaves are large, heart-shaped, and the upper side is beautifully marked with a metallic silvery hue, in the way of *Cissus discolor*, and the under side is a rich crimson red and purple in shades. *B. xanthina* is a vigorous plant, noble foliage, deep green, and underneath a ruby-red. The flowers are large, of a rich yellow colour, very distinct and fine. *B. cinnabarina*: it is a vigorous grower, large light green leaves, and its paniced heads of large blossoms, of a rich orange-colour, are very fine. The last three sorts do best in a *stove*, and are highly entitled to a place in every one.

ON CLERODENDRONS.—Last August, having four strong plants of *Clerodendron fragrans* (or *Volkameria fragrans*), and a good plant of *C. splendens*, I placed the plants of *fragrans* around the *splendens*, and inarched four branches of the latter upon the former; they soon united, and grew vigorously, more so than even the parent plant, and, I doubt not, but will furnish me with extra fine specimens of this beautiful flowering climber. I think this branch of inarching weakly kinds upon more vigorous ones is not attended to as its advantages entitle it.—J. MITCHELL.

LUCULIAS.—A country clergyman is informed that these plants require similar treatment to the *Camellias*. They must not be cultivated in the stove more than a few months in the year, but after the *spring growth*, they should be *hardened off*, and towards autumn be placed “out of doors;” they will then bloom fine *indoors*, and not be likely to perish, as is so often the case when not treated as above.—AMICUS.

FLOWERS AND PERFUMERY.—Some idea of the importance of perfumery as an article of commerce may be formed, when it is stated that one of the large perfumers of Grasse, in France, employs annually 80,000 lbs. of Orange blossoms, 60,000 lbs. of Cassie flowers, 54,000 lbs. of Violet flowers, 20,000 lbs. of Tuberose, 16,000 lbs. of Lilac flowers, besides Rosemary, Mint, Lavender Thyme, Lemon, Orange, and other odorous plants, in like proportion. Flowers yield perfumes in all climates, but those growing in the warmer latitudes are, it seems, the most prolific in *their odour*, while those from the colder are *sweetest*. Though many of the finest perfumes come from the East Indies, Ceylon, Mexico, and Peru, the south of Europe is the only real garden of utility to the perfumer. Grasse and Nice are the principal seats of the art. From their geographical position, the grower within comparatively short distances, has at command that change of climate most applicable to bring to perfection the plants required for his trade. On the sea-coast his Cassie grows without fear of frost, one night of which would destroy all the plants for a season; while nearer the Alps his Violets are found sweeter than if grown in the warmer situations where the Orange tree and Mignonette bloom to perfection. England, however, can claim the superiority in the growth of Lavender and Peppermint; the essential oils extracted from these plants grown at Mitcham, in Surrey, realise eight times the price in the market of those produced in France or elsewhere, and are fully worth the difference for delicacy of odour.

SLEEP OF PLANTS IN THE ARCTIC REGIONS.—Being much interested with the article on the "Sleep of Plants," by Mr. Peter Makenzie, which appeared in the June Magazine, I send these additional particulars on the subject, for the August Number.

"Mr. Seemann, the naturalist of Kellett's Arctic Expedition, states a curious fact respecting the condition of the vegetable world during the long day of the Arctic summer. Although the sun never sets while it lasts, plants make no mistake about the time when, if it be not night, it ought to be, but regularly as the evening hours approach, and when a midnight sun is several degrees above the horizon, droop their leaves and sleep, even as they do at sunset in more favoured climes. "If man," observes Mr. Seemann, "should ever reach the pole, and be undecided which way to turn, when his compass has become sluggish, his timepiece out of order, the plants which he may happen to meet will show him the way; their 'sleeping-leaves' tell him that midnight is at hand, and that at that time the sun is standing in the north."

TROPEOLUM SPECIOSUM.—Some years back, you gave a figure of this plant. I procured one, kept it in a warm greenhouse, but could not obtain a flower. I read in a subsequent number of this magazine, that it flourished when growth out doors against a north-aspected wall. I therefore put out two good plants, one against a north aspected wall, and the other exactly faced north-west. Both plants flourished, but especially so the one against the north-west wall. It is more vigorous, and a much greater profusion of its lovely brilliant scarlet large flowers. In winter I cover the ground for several feet with six inches thick of dry leaves, which are removed at spring.—A MIDLAND COUNTY AMATEUR PLANT-GROWER.

ON SHRUBS, &c.—I should feel very much obliged if any of your numerous correspondents would give me some information on the following points, in an early Number:—

The management of turf, especially in confined and shady situations.

The shrubs and flowers which will do best with the minimum of sun.

Those that will do without any sun at all, as under a north wall.

What will thrive best in a small and confined garden, sheltered by high walls in every direction, and rather damp, though in a high situation.

For what shrubs and flowers the black marsh, or bog earth, may be made available, besides American bog plants; and if it may be added to loam, to form a compost for Geraniums or other flowers.

Also, if there be any substitute for the sand recommended for striking cuttings of various kinds.—A CONSTANT SUBSCRIBER.

DESTRUCTION OF HEARTSEASE BY MILDEW.—I am an admirer of the Heartsease, and have cultivated them for some years; but, for the last three, I have experienced considerable vexation from losing several of my best kinds, from a kind of white mildew with which they have been affected, which spoils the bloom and ultimately kills the plants. I am inclined to think it is an epidemic disease, as several of my neighbours' Heartsease have suffered from the same cause. Is the disease hereditary? I mean, will seedlings raised from plants affected be more likely to be attacked than others raised from plants not diseased?

From your invariable kindness in inserting the queries of correspondents, I have been induced to ask the favour of any suggestion you, or some reader, may be able to give as a remedy for the above disease, by which you will confer an obligation on several growers in my neighbourhood, Leicester.

[Dusting the plants overhead, and the under side of the foliage too, with common sulphur, is a perfect remedy. It costs but a trifle, and is readily done. In old, stiffish soil, and confined, damp situations, the plants are liable to be affected with mildew. Each new plantation should be put in a *fresh*, well-enriched, loamy (if yellowish, the better) soil, on an open substratum. If a new plantation is made from the offsets of diseased plants, they should be well dusted with the sulphur, and planted in the manner above stated. If there should be appearances of an attack by mildew, the earliest attention to destroy it should be given, or it will rapidly spread. We hope some of the general cultivators of Heartsease will give us the results of their experience, in order more fully to meet the wishes of our correspondent. The disease is not inherent in the seed.—M.P.]





Verbena, 'Souvenir de Jane Hanson'



" The tiny heath-flowers now begin to blow;
The russet moor assumes a richer glow;
The powdery bells, that glance in purple bloom,
Fling from their scented cups a sweet perfume.
While from their cells, still moist with morning dew,
The wandering wild bee sips the honied glue;
In wider circle wakes the liquid hum,
And far remote the mingled murmurs come."

ILLUSTRATIONS.

VERBENA SOUVENIR DE JANE HANSON.

" This beauteous family to cares unknown,
Were born for pleasure and delight alone,
Gay without toil, and lovely without art,
They spring to cheer the sense and glad the heart."

THIS very lovely VERBENA was raised by Mr. P. F. Croft, of Philadelphia, in the United States of America, from whence a figure of it has been sent. It is of first-rate excellence. Its form is nearly a *complete circle*, edges without notch, and surface nearly even, slightly cupping to the outside. Of the light-coloured Verbenas, it far exceeds all others, nor do we know any other Verbena equal to it for form and beauty. It merits a place in every flower garden. The heads of flowers are generally much larger than what the figure is which we now give. We understand it is one of the most charming varieties for bedding purposes, and produces a beautiful contrast with the high-coloured ones.

Every successive season we have additional beauties, as well as a closer approximation to perfection in form, in this most valuable and lovely genus. So universally are our gardens ornamented with Verbenas, that were they now to become extinct we should have a vacancy that no other plant we possess could adequately make up for such a deficiency. We feel rather more than an usual interest in admiration

of this lovely section of Verbenas, from the circumstance of a member of our own family having obtained the first *Verbena melindres* brought to this country, and under whose care it first bloomed. Beautiful as it was, we did not anticipate that it was the first of an almost numberless family of varieties, which should not only surpass it in magnificence, but in superiority of size and shape, and be the object of *universal* admiration; for who is there that see the lovely Verbenas which add so much to the beauty and ornament of our flower gardens at the present day that are not pleased with them. It is not, however, generally known that the Verbena was held in high estimation and venerated by the ancients of our own and other countries. The very name of the *Vervain* (Verbena) carries our thoughts back to the darkest ages of superstition, and to the religious customs of the ancient heathens: and although they were in almost all particulars ridiculously absurd, yet their antiquity and intimate connection with our own forefathers invest them with a claim upon our particular attention. Whilst it was held in *reverential regard* by them, and we so much admire the beauties of the improved race, we are taught the lesson, that it becomes us to feel grateful that we live in a brighter day, illumined by the mild rays of *Christianity*.

The derivation of the name VERBENA is somewhat uncertain; it originally signified any herb used to decorate ALTARS for religious purposes; and this being so universally employed, received the appellation of THE VERBENA.

The Verbena sustained a considerable part in the impositions which were practised upon the credulous in ancient times, and hence it is so frequently mentioned in profane history. The Magi (termed Wise Men) of the ancient Elamites or Persians, made great use of this plant in their worship or adoration of the sun, always carrying branches of it in their hands when they approached the altar. The magicians also employed the Vervain in their pretended divinations, and affirmed that, by smearing the body over with the juice of this plant, the person would obtain whatever he set his heart upon; and be enabled to reconcile the most inveterate enemies, make friends with whom he pleased, gain the affections and cure the diseases of whom he listed. When they cut this plant it was always done when neither the sun nor moon was visible, and they poured honey and honeycomb on the earth as an atonement for robbing it of so precious an herb.

The Greeks called it THE SACRED HERB, Juno's tears, and Dove-wort; and it was with this plant only that they cleansed the festival table of Jupiter before any great solemnity took place, and hence, according to Pliny, the name of Verbena is derived. It was also one of the plants which was dedicated to the Goddess of Beauty. Venus the victorious wore a crown of Myrtle interwoven with Verbena.

The Romans continued the use of this plant in their sacred rites, sweeping their temples and cleansing their altars with it, and sprinkling holy water with the branches. They also hallowed or purified their houses with it to keep off evil spirits. Their ambassadors or heralds at

arms, wore crowns of it when they went to denounce war or give defiance to their enemies; and which is thus noticed by Drayton:—

“A wreath of Verbene heralds wear,
Amongst our garlands named,
Being sent that dreadful news to bear,
Offensive war proclaimed.”

Virgil mentions it as one of the charms then in use:—

“Bring running water, bind those altars round
With fillets, and with Vervain strew the ground.”

The Druids, both in Gaul and in Britain, regarded the Vervain with the same veneration which they bestowed on the Mistletoe, and like the Magi of the East, they offered sacrifices to the earth before they cut this plant in the spring, which was a ceremony of great pomp. Pliny tells us that the Druids made use of it in casting lots, and in drawing omens, and in other pretended magical arts:—

“Dark superstition’s whisper dread
Debarr’d the spot to vulgar tread;
‘For there,’ she said, ‘did fays resort,
And satyrs hold their sylvan court,
By moonlight tread their mystic mazo,
And blast the rash beholder’s gaze.’”

Walter Scott.

The Druids held their power through the superstition of the people, and as they were great pretenders to magic and divination, they excited the admiration, and took advantage of the ignorance and credulity of mankind; for by these arts they pretended to work miracles and to exhibit astonishing appearances in nature as well as to penetrate into the counsels of heaven.

Divested of these pretended powers, there is no doubt but that the Druids were better acquainted with the medicinal properties of herbs than any other class of men in their day, since, their residences being in the recesses of mountains, groves, and woods, where vegetable productions were constantly courting their attention, it is natural to suppose that they would in some measure become acquainted with the qualities of plants in general. That the Druids of Gaul and Britain applied themselves to this study, and made great use of herbs for medical purposes, we have sufficient evidence, since we learn from scattered hints in Pliny’s Natural History, that they sometimes extracted the juice of herbs and plants, by bruising and steeping them in cold water, and sometimes by infusion in wine; that they made potions and decoctions by boiling them in water; and we learn also that they frequently dried certain herbs before infusing them, and that they administered some plants by fumigations, and practised the art of making salves and ointments of vegetables, for which they had great renown even at Rome, to which city they exported the Vervain, and it was hence called *Britannica*.

Although so many ages have passed away since the Druids and their pretended spells have been abolished, yet we frequently meet with lingering sparks of their imagined light among the vulgar, who upon every occasion cling to superstition.

Madame de Latour tells us that the shepherds in the northern provinces of France, still continue to gather the Vervain under different faces of the moon, using certain mysterious ejaculations known only to themselves, whilst in the act of collecting this herb, by whose assistance they attempt to cure not only their fellow-servants, but their masters also, of various complaints, and they profess to charm both the flocks and the rural belles with this plant.

The Germans, to this day, present a hat of Vervain to the new-married bride, as if to put her under the protection of Venus victorious, which is evidently the remains of ancient customs.

NOTES ON NEW OR RARE PLANTS.

ACROCLINIUM ROSEUM.—It belongs to the Linnæan class *Syngenesia*. Seeds were sent by Mr. James Drummond in 1853, from South-West Australia to the Royal Gardens at Kew, where plants have bloomed this summer. It is an annual, and has been kept in the greenhouse. It grows erect, and, from its small annual root, numerous slender stems push forth from one to two feet high, blooming very freely. Each flower has much the appearance of *Rhodanthe Manglesii*, but larger, being about two inches across, of a beautiful rosy-pink colour, with a striking yellow eye. From what we saw of its growth in the greenhouse, we feel certain that it will flourish freely in the open air during summer, and prove to be a very beautiful bedding plant, highly meriting a place in every flower garden. If grown in patches in a border of mixed flowers, it will be one of the prettiest of its size, and, as a summer ornament for the greenhouse, it will prove one of the neatest. (Figured in *Botanical Magazine*, 4081.)

CALYPTRARIA HÆMANTHA.—This splendid blooming plant belongs to the *Melastomææ*, and is a native of the Andes of South America, from whence it has been obtained by M. Linden, of Brussels. It is a vigorous plant, with handsome medium-sized foliage. The flowers are produced in large terminal branching cymose panicles. Each blossom is about three inches across, of a rich crimson-red, tinged with violet, and having ten long white filaments. The fine paniced heads of numerous magnificent flowers are exceedingly ornamental. It merits a place in every stove, and would form a most striking contrast with the fine violet-blue *Melastomas*. It will be a valuable acquisition to our exhibition plants.—(Figured in *Mr. Van Houtte's Flore des Serres*, 924.)

CAMPANUMÆA LANCEOLATA.—It belongs to the *Campanulacææ*, and a native of China. It is a climber, having similar sized and formed leaves to those of a *Bouvardia*. It blooms very profusely. Mr. Van

Houtte states, that "on the 28th of July, a plant in his establishment had 200 flowers upon it." Each blossom is drooping, bell-shaped, an inch and a half long, and the same extent across the mouth; of a greenish-white outside, and the inside green, netted with purple. The plant requires a slight protection in winter; and, if uncovered in spring, or, if in a pot, planted out in spring, it will flourish admirably in the open air.—(Figured in *Flore des Serres*, 927.)

CAMELLIA PRINCESSE MARIE.—The flowers are very double, petals *fineform*, and thick substance; a rich rosy-red, with a very distinct white stripe up the centre of each petal. A very beautiful variety.—(Figured in *Flore des Serres*, 928.)

PITTOSPORUM FLAVUM.—A moderate sized, much-branched shrub, a native of East Australia. The leaves are about the size of those of a vigorous apple tree. The flowers are produced in terminal corymbose heads, each blossom (of five segments) is an inch and a half across, of a rich yellow, with red stripes at the centre; and the tubular part of the flower is an inch long. It is a fine plant for the conservatory.—(Figured in *Botanical Magazine*, 4799.)

RHODODENDRON LEPIDOTUM, VARIETY CHLORANTHUM.—Dr. Hooker discovered this in Sikkim Himalaya, and at first considered it a new species, to which he gave the name of *Rhododendron salignum*, but subsequently he considers it a variety only of *Rhododendron lepidotum*. It forms a dwarf branching shrub. The flowers are borne at the ends of the shoots two or three together, footstalks two inches long, and each blossom an inch across, white, with a tinge of green at the centre, and the eleven large red-brown anthers in contrast with the other part of the blossom is very pretty. (Figured in *Bot. Mag.*, 4802.)

RHODODENDRON CITRINUM—THE CITRON FLOWDRED.—A native of Java, which has been imported into England by Messrs. Rollisons of Tooting. It is stated, that in Java it inhabits trunks of old trees in marshy mountains. It forms a handsome, evergreen, greenhouse shrub. The blossoms are *bell-shaped*, each about an inch long, and nearly as much across the mouth, of a pretty lemon colour, and fragrant. The anthers are orange-red, which contrast prettily with the lemon corolla. The leaves are in form and size like those of a broad-leaved greenhouse azalea. The flowers are produced at the ends of the shoots five or six together. It is a neat and handsome shrubby plant. (Figured in *Bot. Mag.*, 4797.)

PRIMULA MOLLIS.—THE SOFT-LEAVED BOOTAN PRIMROSE.—It is a charming new *Primula*, intermediate as it were between *Primula Sinensis* and *P. cortusoides*, but very different from either in foliage, corolla, and especially the calyx. It is a native of the hills of Bootan, and has been sent to Mr. Nuttall, of Rainhill, near Prescott, in Lancashire, where it has been kept in the greenhouse; but it is considered likely to succeed in the open air. It is a perennial plant, and the flower stem rises about eight inches high bearing from 10 to 12 beautiful lively rose-coloured flowers, having a red eye. Each blossom is nearly an inch across. The *tubular* part of the calyx is of rich purple-

red, and the five segment parts are green. It is a charming species. (Figured in *Bot. Mag.*, 4798.)

SOLLYA DRUMMONDII.—One of the prettiest greenhouse twining plants for a pot, coiled round a wire frame work, or several sticks placed around the inside of the pot. It is a slender looking plant, grows very freely, and blooms profusely. The flowers are bell-shaped, drooping about half an inch across the mouth, of the most intense blue colour, and exceedingly neat and handsome. It blooms nearly all the year.

BEGONIA BISERRATTE.—The leaves are very like those of the black currant bush. The plant is bushy $2\frac{1}{2}$ feet high. The flowers are pretty, large, white, with a rosy margin. It flourishes in the greenhouse at Kew.

BEGONIA PRESTONIENSIS.—This is one of the most ornamental greenhouse plants; its profusion of large brilliant orange-scarlet flowers is exceedingly showy. It is so free in growth and blooming that it may be managed so as to have it bloom throughout the year. It ought to be in every greenhouse.

RHODODENDRON NUTTALII.—A very distinct and magnificent greenhouse species, is a native of the Bootan Alps. The leaves are from six to eight inches long, and three to four broad, leathery. The flowers are borne in terminal corymbs, well shaped, four to six blossoms in each. A separate flower is about five inches long, and as much across the front; white tinted with rosy-red, and yellow at the base inside, also delightfully fragrant.

RHODODENDRON WINDSORII, also from the Bootan mountains, and proves quite hardy. It is a close dwarfish shrub blooming freely in large heads. The flowers are of a "deep crimson—scarlet colour," much more brilliant than those of *R. arboreum*. It is a valuable acquisition.

RHODODENDRON CAMELLIÆ FLORUM.—The flowers are white, tinged with rose, in form like a single *camellia*, an inch and a half across. From Bootan.

RHODODENDRON JENKINSII, A fine shrub six to seven feet high, leaves large, leathery. The flowers, it is supposed, (from the buds) are yellow, and large, in which case it will be exceedingly valuable.

CHRYSANTHEMUM ANNIE HENDERSON.—The flowers are in form and colour (yellow) of those of *Annie Salter*, of dwarf habit, and blooms as early as July, August, &c. In consequence of the earliness of its flowering, seed will be readily obtained, and we shall soon have a class (of all the usual colours) of summer blooming, adapted too for bedding purposes, as well as in pots. The following *minima kinds* come into bloom about the end of July, or early in August—*Belle d'Aout*, salmon yellow. *Andromede*, rose, very free bloomer. *Orion*, canary yellow. *Helene*, deep rosy-purple.

HELIOTROPIMUM, BEAUTY OF THE BOUDOIR.—It is of compact habit, and very free blooming. The flowers are of a dark violet, with a light eye, produced in large trusses. It is valuable either for bedding or in pots.

ACHIMENES, SIR TREHERN THOMAS.—The flowers are large, of a fine rosy-crimson, one of the best.

BEGONIA LAPEYOUSSEI.—It is an abundant bloomer, the flowers rose coloured, an admirable winter-flowering plant.

ECHITES PELLIERI.—The flowers are produced in bunches of a canary-yellow colour, and the plant flourishes, when in a pot, trained to a circular framework, a fine stove plant.

CYTISUS ONOSPERMA.—A greenhouse shrub, in habit like *C. filipes*. The flowers are borne in bunches, white, deliciously fragrant, and blooms fine in winter.

FABIANA VIOLACEA.—As hardy as the pretty hardy shrub *F. imbricata*, which has tube-shaped heath-like white flowers, very neat and pretty. The new plant is like the old one, excepting the flowers being of a *violet* colour; very handsome.

POTENTILLA WELLINGTONIA.—A splendid seedling, ground-colour, a rich yellow, with a broad margin of rich scarlet, and the under side is yellow. Each blossom *three inches* across, and of fine form. It stands unequalled.

CAMPANULA ALLIARÆ FOLIA.—An erect grower, two to three feet high. Flowers borne on two-thirds of each spike, white, *drooping*, *large bells*, very neat and handsome, quite hardy.

THE FLOWERLESS PLANTS.

BY WILSON FLAGG BEVERLEY, U. S.

As a tribe of vegetable curiosities, pleasantly associated with cool grots, damp shady woods, rocks rising in the midst of the forest, with the edges of fountains, the roofs of old houses, and the trunks and decayed branches of trees, may be named the flowerless plants. Few persons know the extent of their advantages in the economy of vegetation; still less are they aware how greatly they contribute to the beauty of some of the most beautiful places in nature, affording tints for the delicate shading of many a native landscape, and an embossment for the display of some of the fairest flowers of the field. The violet and the anemone, that peep out upon us in the opening of spring, have a livelier glow and animation when embosomed in their green beds of mosses, and the arethusa blushes more beautifully by the side of the stream when overshadowed by the broad pennons of the umbrageous fern. The old tree with its mosses wears a look of freshness in its decay, the bald rock loses its baldness, with its crown of lichens and ferns, and every barren spot, in the pastures or by the wayside, is enlivened and variegated by the carpet of flowerless plants, that spread their green gloss and many-coloured fringes over the surface of the soil.

Mosses enter into all our ideas of picturesque ruins; for they alone are evidence that the ruins are the work of time. An artificial ruin can have no such accompaniment, until time has hallowed it by veiling its

surface with these memorials. They join with the ivy in adorning the relics of ancient grandeur, and spread over the perishable works of art the symbols of a beauty that endureth for ever. While they are allied to ruins, and remind us of age and decay, they are themselves glowing in the freshness of youth, and cover the places they occupy with a perpetual verdure. They cluster around the decayed objects of nature and art, and are themselves the nurseries of many a little flower that depends on them for sustenance and protection. Though they bear no flowers upon their stems, they delight in cherishing in their soft velvet knolls the wood anemone, the star-wort (*Houstonia cærulea*), the cypripedium and the white orchis—the nun of the meadows—whose roots are embedded among the fibres of the peat mosses, and derive support from the moisture that is accumulated around them. Nature has provided them as a protection to many delicate plants, which, embowered in their capillary foliage, are enabled to sustain the heat of summer, and the cold of winter, and remain secure from the browsing herds.

Winter, which is a time of sleep with the higher vegetable tribes, is a season of activity with some of the flowerless plants. There are certain species of mosses and lichens that vegetate under the snow, and but few of the mosses are at all injuriously affected by the action of frost. By this power of living and growing in winter, they are fitted to act as a protection to other plants from the vicissitudes of winter weather, and by their close texture they prevent the washing away of the soil from the declivities into the valleys. They answer the double purpose of catching the floating particles of dust and retaining them about their roots, and of preventing any waste from the places they occupy. Finding in them the same protection which is afforded by the snow, or by the matting of straw provided by the gardener, there are many plants that vegetate under their surface, secure from the alternate action of freezing and thawing in winter, and of drought in summer. Hence certain flowers blossom more luxuriantly in a bed of mosses than in the unoccupied soil.

The mosses are seldom found in cultivated lands. As they grow entirely on the shallow surface, the labours of the tiller of the soil are fatal to them. They delight in old woods, in moist barren pastures, in solitary moorlands, and in all unfrequented places. In those situations they remain fresh and beautiful, while they prepare for the higher vegetable tribes many a barren spot, that must otherwise remain for ever without its plant. They are therefore the pioneers of vegetable life; and nature, when she selects an uncongenial tract to be made productive of fruits or flowers, covers the surface with a close verdure of moss, and variegates it with lichens, before she strews the seeds of the higher plants to vegetate among their roots. The wise husbandman, who by a careful rotation of crops causes his land to be constantly productive, is but an humble imitator of nature's great principle of action.

The mosses have never been made objects of extensive cultivation by our florists. Every Rambler in the wild wood knows their value and

their beauty, which seem to have been overlooked by the cultivator. They undoubtedly possess qualities that might be rendered valuable for purposes of artificial embellishment. There is no tree with foliage of so perfect a green tint as that of the moss which covers the roofs of very old buildings. The mossy knolls in damp woods are peculiarly attractive on account of their verdure, and the fine velvety softness of their pleasantly rounded surface. Though the mosses produce no flowers, the little germs that grow on the extremities of their hair-like stems are perfect jewels. With them, however, it is the stem that exhibits the most beauty of hues, varying from a deep yellow to a clear and lively claret or crimson, while the termination is green or brown. I have nothing to say of the physiology of their propagation. I treat of mosses only as they are beautiful objects of sight, and useful agents in unfolding and distributing the bounties of nature. This tribe furnishes no sustenance to man or to any other animal. Those eatable plants which are called by the name of mosses are either lichens or seaweeds. Nature, who, with a provident hand, renders many of her productions capable of supplying a manifold purpose in her economy, has limited the agency of the mosses to a few simple and beautiful services. They perform, under her invisible guidance, for the field and the forest, what is done by the painter and the embosser for the works of the builder of temple and palaces.

The ferns have fewer picturesque attractions than the mosses; but like the latter, they are allied with the primitive wilds of nature, with gloomy swamps, which they clothe with verdure, and with rocky precipices, on whose shelvy sides they are distributed like the tiles on a roof of a house. They resemble mosses in their dissimilarity to common vegetable forms; and their broad wing-like leaves or fronds are the conspicuous ornaments of wet woods and solitary pastures which are unvisited by the plough. By their singular appearance we are reminded of the primitive forms of vegetation on the earth's surface, and of the luxuriant productions of the tropics. In places where they are abundant, the hellebore, with its erect stem and prim foliage, towers above the low shrubbery, and the purple *sarracenia* rears its nodding flowers like some strange visitant from another clime.

The ferns are for the most part a coarse tribe of plants, having more beauty in their forms than in their texture. In temperate latitudes it is only their leaf or frond that is conspicuous, their stems being either prostrate or subterranean. Yet in some of the species nothing can be more beautiful than the ramifications of their fronds. In their arrangements we may observe a perfect harmony and regularity, without the formality that marks the compound leaves of other plants. Herein nature affords an example of a compound assemblage of parts, in a pleasing uniformity that far exceeds the most ingenious devices of art. Apparently similar arrangements are seen in the leaves of the poison hemlock, the milfoil, and the Roman wormwood; but their formality is not so beautifully blended with variety as that of the compound-leaved ferns.

In tropical countries some of the ferns are woody plants, attaining the size of trees, rising with a branchless trunk over fifty feet in height, and then spreading out their leaves like a palm tree. Hence they are singularly attractive objects to the traveller from the north, by the sight of which he seems to be carried back to the early ages of the world, before the human race had a foothold upon the earth. Here we know them only as an inferior tribe in relation to size, the tallest seldom exceeding two or three feet in height. Everything in their appearance is singular, from the time when they first push up their purple and yellow scrolls above the surface of the soil, covered with a sort of downy plumage, to the time when their leaves are spread out like an eagle's wings, and their long spikes of russet flowers, if they may be so called, stand erect above the weeds and grasses, forming a beautiful contrast with the pure summer greenness of all other vegetation.

There are few plants that exceed in beauty and delicacy of structure the common maiden-hair. The main stem is of a glossy jet, and divided into two principal branches, that produce in their turn several other branches from their upper side, resembling a compound pinnate leaf, without its formality. In woods in the western part of this state is a remarkable fern called the walking leaf. It derives its name from a singular habit of striking root at the extremities of the fronds, giving origin to new plants, and travelling along in this manner from one point to another. There is only one climbing fern among our native plants. Equally beautiful and rare, it is found only in a few localities all the way from Massachusetts to the West Indies. Unlike other ferns in its twining habits, it has also palmate leaves, with fine lobes, and bears its fruit in a panicle, like the *Osmunda*. But we need not search out the rare ferns for specimens of elegance or beauty. The common polypody, with its minutely divided leaves, covers the sides of steep woody hills and rocky precipices, and adds a beautiful evergreen verdure to their barren slopes, otherwise destitute of attractions. The ferns and the mosses are peculiarly the ornaments of waste and desert places, clothing with verdure barren plains and rough declivities.

From the flowerless plants mankind do not derive sustenance proportionate to that afforded by the other tribes. The ferns, in the middle ages, obtained the name of "capillary herbs," from the belief that they contained substance that would promote the growth of the hair. The active principle was an alkali obtained from the ashes. Modern experience has not proved their usefulness or their possession of any extraordinary virtues. The female fern has a mucilaginous root, which, in times of scarcity, has been manufactured into bread. An old traveller in America speaks of a fern called *Filix baccifera*, which is loaded with eatable berries; and some botanists have represented the sago plant as a true fern. These two last statements are not well authenticated. Next to the mosses the ferns are the least useful tribe of plants, with respect to their nutritive properties or their medicinal virtues.

I have always attached a romantic interest to the sea-weeds (*Algæ*).

whose forms remind one of the haunts of the Nereids of the mysterious chambers of the ocean, and of all that is interesting among the deep inlets of the sea. Though flowerless, they are unsurpassed in the delicate arrangements of their branches, and the variety of colours they display. We see them only when broken off from the rocks on which they grew, and washed upon the shore, where they lie, after a storm, like flowers scattered upon the greensward by the scythe of the mower. When branching out in the perfection of their forms, underneath the clear briny tide, they are unsurpassed by few plants in elegance. The artist has taken advantage of their peculiar branching forms, and their delicate hues, and weaves them into chaplets of the most beautiful designs.

The sea-weeds seem to be allied to the lichens, and are considered by some botanists as the same plants modified by growing under water, and tinted by the iodine and bromine which they imbibe from the sea. Like the lichens, they afford many species which are wholesome and nutritious articles of food. Among these may be named the pepper dulse (*Fucus pinnatifidus*), having an agreeable aromatic taste and eaten as a salad; the daberlocks (*F. esculentus*), used as food in Scotland; the Irish moss (*Chondria crispus*), and the red dulse, which is said, when roasted, to have the flavour of oysters. The laver is another of the eatable kinds, and is used as a salad and a pickle. It is useless to name the great variety of *Algæ* which are palatable and wholesome. Their office in the economy of nature, according to a beneficent law that prevails throughout the earth, seems to be that of appropriating all the superfluous nutrible substances that float in the waters, thereby preserving them for the benefit of a higher race of beings.

The lichens are the lowest tribe in the scale of vegetation. They make their appearance on naked rocks, and clothe them with a sort of fringe, holding fast on the rock for security, and deriving their chief sustenance from the atmosphere and the particles of dust wafted on the winds and lodged at their roots. They have properly, however, no roots, neither have they leaves or stem; yet they are almost infinitely varied in their forms, hues and ramifications. They grow in all places which are exposed to air and moisture, on the surface of rocks, old walls, fences, posts and the branches of trees. Some of the species are foliaceous, resembling leaves without branches, and without any distinct or regular outlines, and found mostly on rocks. Others are erect and ramified like trees and shrubs, but without anything that represents foliage. Such is that common grey lichen (*Cenomyce*) that covers our barren hills, which is a perfect hygrometer, crumbling under the feet in dry weather, and yielding to the step like velvet whenever the air contains moisture. In similar places, and growing along with it, is found one of the *hepatic* mosses, that produces those little tubercles—the fructification of the plant—resembling dots of sealing wax, and eagerly sought by those who manufacture designs in moss. But the most beautiful lichens are those which are pendent from the branches of trees (*Usnea*), consisting of branching threads, of a ash-green colour,

and bearing little circular shields at their extremities. These lichens give character to moist woods and low cedar swamps, where they hang like funereal drapery from the boughs and deepen the gloom of their solitudes.

Lichens, though inhabiting all parts of the earth, are particularly luxuriant in cold climates, thriving in extreme polar latitudes, where not another plant can live. Nature seems to have designed them as an instrument for preparing every barren spot with the means of sustaining the more valuable plants. Not only do they cause a gradual accumulation of soil by their decay, but they actually feed upon the rocks by means of oxalic acid that exudes from their substance. By this process the surface of the solid rock is changed into a soil fitted for the nutrition of plants. After the lichens have perished, the mosses and ferns take root in the soil that is furnished by their decay. One vegetable tribe after another grows to perfection and perishes, but to give place to its more noble successor, until a sufficient quantity of soil is accumulated for the growth of a forest of trees. In such order may the whole earth have been gradually covered with plants, by the perishing of one tribe after another, leaving its substance for the support of a superior tribe, until the work of creation is completed.

Many of the lichens afford sustenance to man, and are useful in medicine and the arts. The Iceland moss is used as food in the cold latitudes, in a variety of forms and preparations, and was formerly prescribed, on account of its bitter principle, as a remedy for consumptions. The "tripe of the rock" is a lichen that has afforded a grateful repast to many a starving Canadian hunter. Another species dyes a fine scarlet, and is also used as a substitute for allspice. Many of them are aromatic, and form the basis of scent powders. As the higher vegetable tribes, through the breathing apparatus afforded by their leaves, absorb carbonic acid from the atmosphere, it is probable that the lichens and *fungi*, many of which are known to contain peculiar chemical properties, are the natural absorbents of such mineral poisons as may be floating in minute quantities in the atmosphere, and act an important part as purifying agents.

PINKS.

BY AN OLD PINK GROWER.

THESE favourite flowers are improving so rapidly in size, smoothness of petal, and distinctness of colour, that I feel certain many of the new varieties have only to be seen to completely supersede the neat, though "buttonlike" sorts, such as Greensides, Susanna, &c. I have purchased some of these, and growing a number of the Lancashire and Yorkshire varieties, I have been enabled to make a few memoranda, which I forward for insertion in your next number. I have had a most excellent bloom, and as my plan is simple, I may as well describe it. My bed

was well dug in the autumn, and enriched with decayed horsedung and burnt turf ashes, and to the latter I attribute in a great measure my fine growth. At the end of August, the bed was planted with good well-rooted plants, watered occasionally, and about the end of September, the surface of the soil was covered with well decayed cucumber bed manure. This remained on all the winter, and when the bed was cleaned in spring, was slightly forked in with a small fork, the prongs being not more than four inches long. When the buds made there appearance, the plants were regularly watered, and at half their size, weak liquid manure was given. The amateur must mind these points:—Rich compost, not too light; autumn planting, covering the soil before winter, and regular watering. By these means, he will have large finely-laced blooms, with plenty of increase. I will now tell your readers about some of the sorts I have seen, and what I think of them. I will begin with

Prince of Wales (Bragg).—Really a very fine flower, with stout well-formed petals. It throws up a tall flower-stalk, strong as a carnation. The lacing of the blooms is broad rosy purple. It has the advantage too of blooming evenly without assistance, and has not that confused moplike appearance which very many used to have, but which I believe are now rapidly disappearing from all fine collections, though the next named is one of that sort.

King of Hanover.—A flower of some fifty or more petals. With me, coarse and ugly.

Ruby (Bragg).—A well-named and beautiful flower; heavy red, but good in character, and a fine sort for exhibition. This should be one of a dozen.

Glory.—One of the most chaste flowers I have seen this season. The white is purity itself, the lacing rosy purple, laid on in medium style, very evenly and truly; the petal is smooth, and will be admired by everyone.

Hon. C. Wellesley.—Quite first-rate. Large, of fine form, heavy red, it might readily be taken for a picotee. The first flower was rather coarse, but those succeeding were quite up to the mark.

Blackeyed Susan, with the same treatment as the forgoing, bloomed very unsatisfactorily, the flowers being neither laced nor black and white, but intermediate. The new sorts have put me quite out of conceit with this variety.

Koh i Noor.—A delicate lilac rose lace. The petal is good, though it cannot be classed either as a red or a purple. It will be a telling flower in a stand, where dissimilarity is required. It appears to be an early variety.

Ada.—This is one of Read's, of Clophill, who has introduced some most excellent varieties. It is one of my favourites,—the white is so pure, and the purple lace so beautifully laid on. I am certain every pink grower must be pleased with it.

Annot Lyle.—Rather rough, but laces well. Some of the latter

blooms have been smooth, but, as it has come with me this season, certainly not first rate.

Pilot. (Hand).—A finely marking old variety, blooms rather too flat for the present advanced state of the fancy, wanting a few small petals to form a crown. If a "moon" (the dark circle in the centre) is wanted, or admired, it has a "full" one.

Sappho (Colcutt).—With me, a splendid flower. Dark reddish purple lace, white very pure, a chaste and excellent sort.

Attraction.—This is one of the many raised by that indefatigable florist, Mr. Looker, of Oxford, and though varying in colour, bears a strong family likeness to many flowers originated in that quarter. They lace remarkably well, but have an undesirable "fringiness," with a spade-ace white ground within the lacing. There are some exceptions, which I shall notice as I proceed. This is a heavy purple, approximating to the shade called Tyrian; the petals in the centre are rather strap-shaped, but it will, with good growth and a little dressing, make a nice flower.

Climax (Looker).—Heavy red. A full capitally-laced flower, very attractive on the bed.

Diadem.—A marone laced flower, blooms flat, without dressing. Distinct, pure and good.

Hon. Mrs. Herbert (Keynes).—Not so large as some, but a flower of great refinement. The white is beautifully pure, and contrasts capitally with its even, very dark lace. It crowns well, blooms smoothly, and ought to be grown by every amateur.

Earl of Carlisle.—Of medium size, good form, dark red lace. There is something about this flower that I am not partial to, though it comes tolerably well, and is neat; certainly it is not particularly showy.

Bishop of Oxford.—Heavy purple. I have had it this season in two characters, heavy and medium laced, in both very attractive. The petal is good, and it appears steady in character.

Laura (Willmer) has now been "out" some years, but still takes a prominent position, and is really a very beautiful sort. Heavy rosy purple lace, smooth petal, good form, and constant. This must be one of a collection, however select.

Queen Victoria (Bunkell).—A rich, finely-marked, dark flower, but serrated, and centre petals strap-shaped. It must, in spite of its "regular conduct," be "moved on."

Brilliant.—A beautifully coloured flower,—cherry-red edge, well laid on,—but, unfortunately, rough.

Edgar (Turner).—Dark red. A sweet variety. White very pure, lacing medium, and nicely done. This sort I much like.

Othello.—Flowers in a pretty form, dark red, very smooth, with small petals to form a crown. Does not require the tweezers much, and is very constant.

Pandora (Looker).—A useful flower, heavy red. Of this I have had some very fine blooms.

Vesta (Looker).—A very fine shade of purple, distinct. The petals are rather flimsy, and curl at the margin; otherwise it is an attractive variety, from its striking colour.

Sarah (Turner).—A remarkably strong-growing, large-flowering variety; laces remarkably well. The second blooms, this season, were unexceptionable. Red lace.

Reliance (Looker).—Rich deep purple, laces well. Were the petals rather broader, this would be a splendid flower.

Picta (Looker).—Red lace, rather thin, and petals incurve too much. It is very pure, and laces well.

Flora (Looker).—A very pretty, nicely-formed red lace; crowns well, and has pleased most people who have seen it.

Lord Norreys must close my remarks for the present. Tall-growing, it laces finely with dark purplish crimson. When strongly grown, it is apt to be coarse, but the second blooms, or when not overgrown, are generally splendid.—(*Midland Florist*.)

WELLINGTONIA GIGANTEA.

BY EDWARD SPEARS, UNITED STATES.

In the last two numbers of the *Floricultural Cabinet*, there are references made relative to the disputation about the name of this tree. I therefore beg you will insert the following additional remarks, taken from *Hovey's Magazine of Botany*, published at Boston.

We have already noticed this fine evergreen tree, and have commented upon the pompous name given it by Dr. Lindley, as has also our correspondent W. R. Prince. We are now glad to learn that our California neighbours have the same opinion as we expressed ourselves, and justly ridicule the pretensions of Lindley to give it the new name of Wellingtonia. The *California Farmer* of May 4, just received, has an excellent article on the subject, which we copy, fully exposing, as it does, the ambitious and overreaching notions of Dr. Lindley, in appending the names of European heroes to our finest American trees. As the writer truly says, 'a more preposterous piece of cockneyfied nonsense never filtered through the brain down into the fingers through the ink of the pen of any denizen of the commercial Babylon of the modern world.'

To the Editors of the California Farmer.

In the *Illustrated London News* of February 11 last—a copy of which is enclosed—you will find an excellent botanical description, accompanied with an engraving, of the celebrated Arbor Vitæ of San Antonio Creek, in the county of Calaveras.

The gentleman who gives the scientific biography of this wonder of living vegetation, was well known to me during his residence in this

country, and it is no flattery to say that a more competent person could not be found to delineate its physical features. Besides extensive journeys through nearly every portion of Oregon and California, Mr. Lobb is pre-eminently fitted to form a correct judgment, from a thorough acquaintance with the order of cone-bearing trees—having traversed the Cordillera of South America, from the equator to near the Straits of Magellan: these countries, with North-west America, affording the most magnificent specimens and varieties of this class of plants. Mr. Lobb is not only an experienced and diligent collector, but his taste has constantly led him to take the greatest interest in the Conifera, and his accuracy and care, I can say from personal knowledge, it is almost impossible to exceed.

The description by this gentleman, of our celebrated tree, was made to the *Gardeners' Chronicle*, prior to the 11th February; Mr. Lobb having sent living specimens of the youthful brothers of the Calaveras giant, with a quantity of the seeds, to London, for the examination of the scientific, and for the purpose of propagating the species in England. The man of the *Chronicle* thereon dilates and exfoliates to that degree, that to any other but a lover of trees and flowers and running brooks, it would be thought expedient to confine him within the square of a soda water bottle crate; but, finally, you conclude it would be wiser to sew him up in a straight jacket, for, after a most inviting and delightful description of the tree, he worries his brains into a vortex of names and quandaries, and finally falls from his excursive flights and heights into the domains of Nature's history, to proposing as a name for our noble *Arbor Vitæ*, or if you please, in Spanish *Arboldzo Grandissima*—what do you think?—what name could you possibly exercise your jealous California guessing at, by which you would arrive at a satisfactory solution of the enigma? Give it up, for I am impatient to let you know. He suggests and accords the name of a soldier—a son of Mars—lately clothed in a Field Marshal's dress in the army of Britain, and called Arthur Wellesley, whilom Duke of Wellington, commander of her military forces till he grew grey with service, and then quietly laid down his life at the finality of his corporeal existence, amidst the benedictions of his countrymen, for sticking to them and by them through thick and thin. He says it ought to be called the 'Wellingtonia gigantea,' and then goes on to call it so, and actually describes it as such; thus making the first assumption of a name, which, with most European and English readers, will cleave to it, unless we enter our vigilant and vigorous protest. And, in the name of California, I shall assume to do so; for a more preposterous piece of cockneyfied nonsense never filtered through the brain down into the fingers through the ink of the pen of any denizen of the commercial Babylon of the modern world.

Without detracting one iota from the claims and character of the great Duke of Wellington, who was all his life a very monument of plain, sagacious, practical good sense—let us ask what right his admiring countrymen in the botanical or military line have for flying off to California to fasten his fame and glory to the most wonderful specimen

of the living, spreading presence of the great Creative Author of all things, who planted this vegetable pyramid as a memento of his handiwork, when the Sierra Nevada was lifted from the volcanic centres of our planet, and emerged, with its snow-crested peaks, from a primeval ocean, which laved its bases! And the beneficent Father of bountiful creation, 3,000 or 5,000 years ago planted with His own paternal hand in a silent valley of our California, on the side of the eternal hills, this sign of his love to that portion of the family of his children who should reside for all mundane time in this partition of the earth's extremities, after passing through centuries of wadings in human blood, and petrified in their souls in the servilities of religious faiths and fanatical bigotries—yes, after 6,000 or 60,000 years of experience, to arrive at the shores of the Ocean of Tranquility, and they and their children sit them down with pleasant and grateful thoughts under its wavy foliage and spreading branches—realizing the typical comparison of the all-embracing wings of nature's Universal Parent. Or, if left as a monument to men, to testify of the truth of the Chronicles of the Democratic Theocracy of the Jews, who, like true cosmopolites, have scattered from the cradles of humanity in the Asiatic Palestine, at that point of their history when Joshua, their first leader after Moses, wearied with the slaughter of the Amorities—"And Joshua said, in the sight of all the hosts of Israel, 'Sun, stand thou still upon Gibeon, and thou, Moon, in the valley of Ajalon.' And the sun stood still and the moon stayed, and hasted not to go down about a whole day." And at this great concurrence of human passions, when the mechanism of the universe of the Living God was arrested for a space of time, as asserted in the most ancient collection of historical and literary documents, we may imagine our Californian Arboreal Methusaleh was planted to mark a momentous epoch in the cycles of worldly events.

Now, I say, hath not Wellington's name been stuck by Englishmen to boots, shoes, dogs, cats, carts, horses, carriages—to streets, towns, cities, rivers, ships, counties—to puling infants, regiments of red-coated soldiers, inns of rest for man and beast—to every conceivable thing under the sun, so as to weary and disgust the mind of independent man, born of the forest and prairies, with the very sound of his title? Then, why seek to fasten it on the magnificent specimen of nature's handiwork, placed in a far-off valley in the bosom of the snowy mountains of the Northern Pacific, where its roots were laved with the waters from the primeval snows of our Cordillera; for 6,000 years depositing their flakes of gold at its roots, to attract men from every clime to come and rest under its beneficent pyramidal pile of leafy and bounteous refreshing green foliage of shade.

The heart of every Californian ought to rise up indignant at this assumption of a stranger, and in a still greater degree at the American savage who dared, with his barbarous axe, in open day, to slay this mighty giant of our mountains, built by the hand of God in the virginal youth of California, when the foundations of the eternal hills were laid by His majesty and omnipotence.

If Californians or botanists wish to bestow the name of a human being on this majestic plant, there are sufficient names in the history of our State and country far more applicable and proper than those fagged out of old Europe.

But the tree, I conceive, ought not to bear the name of a human being. It is God's tree—His gift to the children of California, to repose under its cooling shade in the heat of the noonday sun, and rest their wearied bodies from exhausting labour. Therefore Californians ought to baptize this primary wonder of botanical science, and not Atlantic or European strangers.—*Alex. S. Taylor.*

FORCING BULBS, AS HYACINTHS, &c.

BY A LONDON AMATEUR FLORIST.

FOR many years it has been a favourite object with me to have a fine bloom of forced bulbs, such as hyacinths, &c., both in glasses and pots, and now the season for commencing operations having arrived, induces me to note down a few particulars, which I have practised; and as to the result, have never failed to have a most brilliant display of these lovely flowers, affording me their varied beauties and fragrance, as additional charms to domestic comforts, at a season of the year which often procures similar *out-door* enjoyments.

HYACINTHS IN GLASSES.—In selecting bulbs, take the plump and firm ones, the more globular the better, being the most perfect.

The bulbs should be placed in *dark coloured glasses*, filling them no higher with water than about an inch from the bulb, wrap the glass and bulb closely round with a piece of old flannel; they must then be put in a moderately warm closet, or other dark place, for two or three weeks, by which time they will have emitted roots, and should be removed to an airy, light and cool situation, till about Christmas, when they may be brought into the warm sitting-room, and placed near the windows. The attention to placing them in the dark, arises from the fact, that where light has free access, leaves will immediately be produced, as it is congenial to their nature; but it is the opposite with roots, and where full light exists, they will not push forward. Kept in the dark roots, push freely, and having obtained them first, leaves and flowers will certainly follow. When they are removed to a light situation, the glasses may be filled up to the tips of the roots, and in a week afterwards up to the bulb. Rain or river water is to be preferred, and should be changed every two or three weeks, the fresh water being applied about the same temperature as that removed. Should the water in either of the glasses become foul sooner than the others, the roots and the under part of the bulb will generally be found covered with a decayed substance, which should be removed, and the whole plant washed. Should off-sets appear round the bulb they should be removed early. As

soon as the Hyacinths are overblown, the blossoms should be stripped off without destroying the leaves or stem, and the plant laid in the earth until June, when they may be taken out and laid up on shelves or boxes, in an airy situation, until October, when, though not fit for blooming a second season in water, they will produce fine blossoms in the open ground, and by thus saving annually the bulbs which have been forced and their numerous off-sets, a beautiful Hyacinth bed of every shade and colour may soon be obtained, which is one of the most pleasing objects in the months of April and May. I repeat that the errors too often observable in growing Hyacinths in water are,—placing them in the *full light* when *first* planted, which is very unfavourable to the growth of the roots—keeping them away from the *light* when throwing up the leaves and blossoms, which prevents their coming to their natural colours—placing them (before the leaves and stems are sufficiently advanced) upon a chimney-piece or other very warm place, which spends too much of the bulb in fibrous roots, and forces up the blossoms before they arrive at their proper size, form, or colour.

Hyacinths, Narcissuses, Jonquils, Tulips, Persian Irises, and other bulbs for early blooming in pots, (without any hotbeds or greenhouses,) should be planted early in September, for which purpose deep-shaped flower-pots should be procured, called bulb pots, placing crocks or coarse gravel at bottom for drainage, and be filled to within two inches of the top with rich loam, containing a portion of fine road sand and decayed manure; then place the bulb on the same without pressure in so doing, and fill to the top with the same compost, after which a little pressure should be used, which will settle the bulb and mould firmly together with the top of the bulb just above the surface of the soil.

When the desired number of roots have been thus potted, they should be removed to any spare corner of the garden, and buried to the top of the pots in the earth, when they must be covered *with leaves*, rotten tanner's bark, or any other light dry substances to the depth of *nine or ten inches*, where they may remain without any attention until the plants will be found to have vegetated an inch or two; they should then be removed, and placed in any warm and light situation, where they will make rapid progress, and produce blossoms far superior to those obtained by other modes of treatment.

TREATMENT OF LUCULIA GRATISSIMA.

By MR. JAMES SMITH, GARDENER, HOPE HOUSE, MERIONETHSHIRE.

Two years ago I planted one in the border of a conservatory, into which abundance of air is usually admitted, and which is kept at a very low temperature; indeed, little artificial heat is employed beyond what will exclude frost, and the thermometer has frequently been as

low as 36° Fahrenheit. The dimensions of it now are, height 7 ft., diameter (measuring through the branches) 5 ft. 6 in., diameter of a cyme of flowers 7 in. The border in which it grows was excavated 2 ft. deep, in the bottom of which is a drainage, composed of brickbats and coarse rubble, 6 in. thick; immediately over this were put turfs of heath-mould rough from the common, upon which again is placed the compost, consisting of one-third strong rich loam and two-thirds sandy heath-mould coarsely broken and well blended, but on no account screened. We consider this drainage very important to plants in general, and absolutely indispensable for *Luculia*, the complete success of which will materially depend upon this being attended to. During the summer and early autumnal months water requires to be freely supplied, and the *under* surface of the leaves, as well as the whole plant, repeatedly washed with the fine rose of the syringe, because being subject to the attacks of red spider, which I need hardly observe will, if undisturbed for any length of time, greatly injure it. Occasionally some liquid manure is applied, but this requires caution, and must not be repeated too often, and not at all after the summer season. The general waterings must also be gradually diminished in September, and afterwards administered very sparingly, for the fine fibrous roots are easily injured by too much moisture. Under this easy management *Luculia* is a splendid plant, covered with cymes of beautiful flesh-coloured fragrant flowers, which continue in perfection during the dull months of November, December, and January. Its foliage, too, is luxuriant, dark, and green, and contrasts admirably with the large, bold heads of flowers. Those who are desirous of successfully cultivating this beautiful plant, should observe that it requires a much cooler treatment than it generally receives. When grown in a pot it must not be excited by high temperature in the spring and early part of summer; it must then be kept in a greenhouse. At the end of May and early in June it should be turned out into the open ground in a *warm situation*, rather sheltered from the sun, and in September be taken up, re-potted, and placed in a vinery or coolish plant-stove. It will then grow freely, and form its heads of flowers, which will expand their beauties and diffuse their fragrance through the winter. It is a good plant to flourish when in bloom in a sitting-room. Whether grown in the hot-house or open air, it requires some portion of shade. It is one of the finest winter plants in the country, and deserves a place in every conservatory, greenhouse, or plant-stove.

MISCELLANEOUS.

HOYA BELLA.—To have this *charming* little *Hoya* in perfection, it requires plenty of warmth and moisture while growing, good drainage,

and a free open soil. The latter should consist of equal parts of good fibrous peat, leaf-soil, and sand, well mixed together, to which may be added a tolerable portion of clean potsherds, broken small, and a few pieces of charcoal. The pots used should be drained from one to two inches in depth, according to their size. The peat should be broken up with the hand, but not sifted.

Presuming that young plants are obtained in spring, they should be placed in a stove or pit, where a temperature of from 65° to 70° is kept up. Under such circumstances they will grow freely, and will soon require shifting into larger pots. Shade slightly during bright sunshine, and water when necessary; but with a sufficiently moist atmosphere, and a moderate use of the syringe on favourable occasions, but little will be required at the roots, heavy drenches of water being prejudicial to them. As they progress, the leading shoots should be stopped, in order to induce the formation of more numerous branches, which should be spread out and arranged so as to make a neat specimen. If by the middle or end of June the plants are still growing freely, another shift may be given, and the same temperature maintained. When they begin to cease growing, which they should be encouraged to do early in autumn, they should be placed on a shelf near the glass to ripen their wood, and a drier atmosphere should be maintained; they may be kept here during winter, provided the temperature is not higher than 55° or 60°; during that season just sufficient water will be required to preserve the foliage in health.

Earlier in January, or a little later, as may be convenient, the plants should be cleaned, top-dressed, and placed in a growing temperature, as before directed, keeping the atmosphere moist, to induce them to break freely. When they have broken well, if large plants are desired, they may be shifted and grown on; but, if intended for flowering, it is preferable to defer shifting, as they bloom most freely when slightly pot-bound. The flower buds will make their appearance as the young shoots progress; and, when commencing to expand, a drier atmosphere, and a somewhat cooler temperature, will prolong the duration of the flowers. If well attended to during the summer, the wood will be perfectly ripened by the time the flowering is over, and the plants may be wintered as before. If it is necessary to prune them back, it should be done a few weeks before starting them, in order to allow time for the wounds to heal over before growth has commenced.

This plant has a fine effect, either planted out or plunged in a basket of moss, and suspended from the roof of a stove or Orchid house. In this way the flowers show themselves to advantage; and if the plants are kept moist while growing, and otherwise well treated, they will last for several years in perfection.—*Gardeners' Chronicle*.

FLORAL

OPERATIONS FOR THE MONTH

IN THE FLOWER GARDEN.

NOW sow seeds of annuals, as *Clarkia*, *Collinsia*, &c., in small pots, well drained, and keep them in a cool frame, or other suitable place during winter; then turn the plants out, entire (or split the balls) into the open borders, in March and April, and they will soon be in bloom, and ornament the garden at an early period. Seeds of many kinds, *sown* in the open border generally survive the winter, and bloom vigorously early the next season. *Carnations*: the layers should be taken off, severing them at a joint as near the root as possible. Only a few of the bottom leaves should be trimmed off to admit the compost to settle closely round the stem, and that no leaves may rot inside the soil, and be likely to damage the main stem. The compost in which to pot them must not be rich, or the plants will be likely to grow too vigorous, and become what florists term too gross. Equal portions of year-old turfy loam and leaf-mould, with a small proportion of sand mixed therein, is rich enough, and of a dryish texture, and the plants keep healthy in it if otherwise duly attended to. In potting, place two layers in each pot. Put them in a cool frame for about ten days, keeping the lights closed, and shaded from mid-day sun; this contributes to an immediate striking root afresh; afterwards they may be fully exposed in a sheltered spot, having a thick floor of coal-ashes or boards to place the pots upon, in order to prevent worms entering. *Pinks*: beds of them may still be made, and the earlier the more successful: dig into the bed four inches in thickness of old manure; do it a week or so before planting, and plant as early in the month as you can. *Pansies*: beds of them should be made for next spring bloom. Pot some of all the best kinds in small pots, to be placed in a cool frame during winter. If the sowing of the seeds of biennials, as *Scabious*, *Canterbury Bell*, *Brompton* and *Queen Stocks*, &c., has been neglected, they should be attended to as early as possible. *Verbenas*: runners should be potted in small pots, a third filled with potsherds, and the rest with good loamy soil, placing them in a close cool frame for ten days, shading from mid-day sun; after which gradually expose them to open air. Attention to them should be immediate. *Bulbs*, as *Hyacinths*, &c., are now to be had, and the sooner they are potted, the more vigorous will they bloom. *Chinese Primroses* should be encouraged for winter blooming. If mildew appears on any plants, dust them with sulphur immediately. *Camellias* may be grafted; the operation may be performed with the greatest success by pursuing the method the French call "*gruffe en placage*," which is merely inserting that portion of wood that includes a bud and leaf, cut longitudinally, into a corresponding cleft in the stock. The grafted subjects should be plunged in bottom heat, and kept covered for at least a month. *Roses* may still be budded. Nail to the wall young shoots of *Banksian Roses*. Cut clean away those not wanted. Prepare beds of *Sweet Violets*. *Roses* for forcing too.

IN THE GREENHOUSE, &c.

Cuttings of nearly all plants may yet be successfully struck; but the earlier they are put in the better. Towards the end of the month take in the tenderer greenhouse plants; but the house should be white-washed, &c., previously, if required. Re-pot *Chrysanthemums*, if the pots they are in be full of roots; give manure-water once a week. *Cinerarias*: pot off singly the offsets, also seedlings. Seed of *Calceolaria* may still be sown, but as early as possible. Cuttings of bedding plants should be put in directly. Pot off singly rooted cuttings of *Pelargoniums*, &c. Cuttings of *Tea Roses*, *China*, *Bourbon*, &c., soon strike root at this period.

BRIEF REMARKS.

WATERING PLANTS.—Although during summer plants in pots require plenty of water, yet the too frequent application of it to hard-wooded things, such as Azaleas, Ericas, Epacrises, &c., even in the growing season, has the injurious effect of retarding the ripening of the young wood until the season is so far advanced that the securing this desirable object becomes a matter of impossibility. Plants like those just mentioned, when started into growth, provided they are not over-potted, and the balls are well drained, require, both in the quantity given and the frequency of its application, a gradual increase of this element, the administration of which ought to be regulated by the state of the weather on the one hand, and the condition of the roots on the other. In dull weather, for instance, and especially if accompanied by a humid atmosphere, an interval of from 24 to 48 hours might with advantage be allowed to elapse between the waterings; for, at all seasons, the fine thready fibres which constitute the roots of these plants are very impatient of excessive moisture. Again, to avoid the danger in this respect resulting from over-potting the plants, care should be taken to have the size of the pots proportionate with the strength of the plants, so that by the time the latter have done growing, the pots will have become filled with roots. Treated in this way, both the wood and the roots will grow and ripen together; a condition which will enable the plant to resist the ill effects of an occasional overwatering. After the growing season is over, the plants of Indian Azaleas should be removed to the plant ground, for the twofold purpose of hardening them off and preventing them from making a second growth; and in order to protect them from the effects of rough weather, it will be advisable to provide each row with a few short stakes driven firmly into the ground, to which should be securely fastened a single fence of neat rods, to suit the height of the plants. To this support, one tie for each plant will be ample. Ericas and Epacrises, however, should on no account be consigned to the plant ground, for a continuance of wet weather is certain death to them. A cool pit, having a south aspect, is the best place to grow them in; and if they have a cool well-drained bottom to stand on, all the sun it is possible for them to have will not harm them. They must, however, have plenty of air; and with proper care in watering, no fears need be apprehended for their perfect culture.—R. MILES. *Gardeners' Chronicle*.

TREATMENT OF THE FUCHSIA FULGENS.—No plant is more capable of being improved, or more certain of being spoiled by cultivation than the *Fuchsia fulgens*. After seeing it in its best state last year, I considered it altogether unworthy of the character it had received. I now entertain a different opinion; and that it may afford a hint to others, I detail the treatment that produced this change. Last year I treated the plant like a Dahlia or Erythrina; before it commenced growing I shook the whole of the dry soil, in which it had been wintered, from its roots, repotted it into as small a pot as would contain them, and assisted the growth by frequent shiftings, until it showed bloom. The result was, so far as overgrown foliage was concerned, as fine a specimen as could be wished. The flowers were, however, very disproportionate, and produced in clusters at the ends of the shoots. These were well enough individually, but by no means realising, as a whole, the expectations that had been formed of it. I was so much disappointed at this that I neglected it, and placed it upon the back shelf of a greenhouse, where it remained torpid until April. It then began to put forth a few feeble buds at the extremities of its unpruned branches; and it was watered with the other plants, but no addition was made to the soil in which it had flowered the preceding autumn. This has effected a complete and desirable change of habit; the foliage is much reduced, and the flowers greatly enlarged. They have not the same tendency to drop early; and instead of being produced at the tips of the shoots only, they form racemes of considerable length, and in this state the plant forms a fine object. Why a scanty supply of nourishment should increase the size of the flowers in proportion to the decrease of foliage has not I think been clearly explained, as the rule is not universal.—WILLIAM ROSS, *Liverpool*.

THE BLACK AND GREEN TEAS OF COMMERCE, BY DR. ROYLE.—It was a remarkable fact that the subject of the difference between the black and green teas had been, until recently, a matter of great uncertainty. The Jesuits, who had penetrated into China, and Mr. Pigou, were of opinion that both the black and green teas were produced from the same plant; while Mr. Reeve believed that they were manufactured from two distinct plants. Now, as regarded himself, he (Dr. Royle) had adopted the view that the best kinds of black and green tea were made from different plants; and examination of tea samples seemed to confirm that view, but a repetition of the experiment had not done so. Mr. Fortune, subsequent to the China war, having been sent out to China by the Horticultural Society of England, made inquiries on the subject. He there found the *Thea bobae* in the southern part of China employed for making black tea; and in proceeding as far north as Shanghai, he found the *Thea viridis* used in making green tea near the districts where the best green tea was made. So far, therefore, the information obtained seemed to confirm the view of two different species of *Thea* being employed to two different kinds of tea; but Mr. Fortune, in visiting the district of Fokien, was surprised to find what he conceived to be the true *Thea viridis* employed in making black tea in districts near where the best black tea was made. He took plants with him from Fokien to Shanghai, and could find no difference between them. It was still, however, desirable to get specimens from the district where the black and green teas of commerce were actually made, and this had latterly been effected. In consequence of the great success which had attended the experimental culture of tea in the nurseries established in the Himalayas, Mr. Fortune was again sent to China by the East India Company. He proceeded to the northern parts of the country, in order to obtain tea seeds and plants of the best description, as the most likely to stand the Himalaya climate. Mr. Fortune procured seeds or plants in great numbers, and sent them to the Himalayas, where they had been since cultivated. When he had reached Calcutta, the tea manufacturers whom he had brought with him made from plants in the Botanic Gardens their black and green tea from the same specimens; so that it was evident it was the process of manufacture, and not the plant itself, that produced the green tea. All now who were acquainted with the difference between black and green teas knew that they could be prepared from the same plant without the assistance of any extraneous materials, though it was a common thing for manufacturers to use indigo, Prussian blue, turmeric, &c., in colouring the tea. Dr. Royle showed specimens of the black tea plant from the Woo-e-Shan, and of the green tea plant from the Hwuychou districts. No specific difference could be observed between the two specimens.

ON PLANTING RHODODENDRONS, &c.—Respecting the depth of peat earth required for Rhododendrons, whether they are perfectly hardy and game-proof, I beg to offer the following remarks, which, from my experience, of from thirty-five to forty years, as well as being the most extensive grower in the kingdom, I flatter myself may be relied on. You are aware that it is not, but ought to be, generally known that all (or with but few exceptions) plants generally known as Americans will flourish in a much less portion of peat earth than is generally allotted to them, and which prevents this most beautiful family of plants being more generally introduced, as on most estates a compost may be prepared at a moderate price to answer the purpose. Of course, when bog can be easily obtained, compost is out of the question; but even then I find many will carry a better foliage than when planted in all the former. I would recommend your subscriber to add to the bog an equal quantity of loam, the same of decayed vegetable matter, such as leaf-mould, rotten wood, or turf, with one-eighth part of good sharp sand: this would carry the whole of the hardy Rhododendrons, *Kalmias*, *Azaleas*, &c., &c.; whilst the more common, such as *R. Ponticum*, with two or three of its varieties, *R. maximum*, *Azalea Pontica autumnalis*, and some others, will grow in almost any loamy soil, with only a small portion of the above composition round the roots of each to start them, if the ground is only first properly prepared, which consists in its being well trenched, keeping the surface or swardy part at top; this is most essential to the well-doing of all plants in forming a new plantation. One and a half to two feet would be quite a sufficient depth for the mould of clumps in general. The common Rhododendrons are all quite hardy, and free from the ravages of game.—*Knaphill Nursery.*

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Ceanothus floribundus.



OCTOBER, 1854.

"The SEASONS, as they change, display the works of God.
 The rolling year is full of Him.
 Forth in the pleasing *Spring*
 His beauty walks; His tenderness and love.
 Wide flush the fields; the softening air is balm;
 Echo the mountains round; the forest smiles;
 And every sense, and every heart is joy.
 Then comes His glory in the *Summer* months,
 With light and heat refulgent. Then His sun
 Shoots full perfection through the swelling year,
 And oft His voice in awful thunder speaks;
 And oft at dawn, deep noon, or falling eve,
 By brooks and groves, in hollow-whispering gales,
 His bounty shines in *Autumn*, unconfined,
 And spreads a common feast for all that lives."

"I love thee, *Autumn*, for thy scenery, ere
 The blasts of winter chase the varied dyes
 That richly deck the slow-declining year;
 I love the splendour of thy sunset skies,
 The gorgeous hues that tinge each falling leaf,
 Lovely as beauty's cheek—as woman's love, too brief."

ILLUSTRATIONS.

CEANOTHUS FLORIBUNDUS.

CEANOTHUS FLORIBUNDUS.—*Copious-flowering.* Ceanothus is derived from *kenteo* to prick, denoting a *spiny* plant. CEANOTHUSES comprise a genus of showy and highly interesting plants. Within the last half a dozen years, several *very handsome* ones have been introduced. Some of the shrubby ones are perfectly hardy, when planted in *dry, elevated, but sheltered* situations. Several of the kinds are well adapted for training to a wall or similar construction, against which they spread rapidly and bloom profusely. The *evergreen kinds* are also valuable as winter ornaments in those situations. They are easy of cultivation, and readily propagated by cuttings. Several of these evergreens form

handsome bushy plants, by attending to cutting back the leading shoots in February, so as to form the bush; and any shoot pushing too vigorous for the others, should be stopped by pinching off the head early in summer. They are readily formed and kept in a neat, bushy; not stiff and formal clipped, but having an easy, open, elegant appearance. When so managed, and in profuse bloom, they are very neat and elegant, whether grown in the open, sheltered, dry border, outdoors, or in a pot in the cool greenhouse. Very small bushes bloom freely. In a compost of good loam, peat, and leaf or vegetable mould, equal parts, and having a dry substrata, they grow freely; and if suitably situated, the new wood becomes *well matured* during summer, and, in proportion, endures the rigours of winter unharmed.

Previous to the introduction into England of the species we now figure, we possessed some other very handsome flowering ones, but the *C. FLORIBUNDUS* is far more beautiful than they. It is a native of California, discovered by Mr. Lobb, who sent seeds of it to Messrs. Veitch, in whose establishments plants have bloomed, and it proves to be *quite hardy*. It forms a medium sized neat shrub. The branches are of a pretty chesnut colour, and the *new shoots* are of a more rosy-pink in proportion. The leaves are evergreen, compact, and shining, having a neat appearance. The flowers are produced in corymbs, and are so densely crowded as to form perfect globe-shaped heads, and are of the *richest brilliant mazarine blue* colour. The thread-like filaments are blue, and the pollen is of a rich golden yellow, which contrast with the blue produces a very interesting and beautiful appearance. It merits a place wherever it can be grown, either indoors or in the open air; and, blooming in such profusion, its elegant heads of brilliant blue flowers are exceedingly ornamental and attractive.

NOTES ON NEW OR RARE PLANTS.

ANGULOA UNIFLORA.—A stove Orchidæa, from Columbia, which has recently bloomed in the nursery of Messrs. Jackson, of Kingston. Each scape bears but one flower (monk's hood shaped), which is about three inches across, a dirty cream colour, tinged and spotted with pink. (Figured in *Bot. Mag.*, 4807.)

HEDERA GLOMERULATA.—*Glomerated Ivy*. (Synonym, *Aralia glomerulata*.) It is a native of the Geda mountain, in Java, where it is known by the name of "Pangang." There is a plant of it in the stove at the Royal Gardens at Kew, where its singularly long, pendant racemes (four to five feet) are yearly produced in April and May, and always attract much attention. The plant is remarkable for its *tree-like*, or almost *palm-like* character, erect, seven feet high, and leafy only at the extremity. The *racemes* of flowers are each about five feet long, *drooping*, bearing forty to fifty large globular heads of flowers, of a brownish or yellowish-green colour. (Figured in *Bot. Mag.*, 4804.)

DESFONTAINIA HOOKERII.—We recently noticed this very valuable plant under the name of *D. spinosa*; but subsequently it has been dis-

covered to be different from a species which had previously been named *D. spinosa*, and the name of *D. Hookerii* is given by Mr. DUNAL to this new and most charming plant. Its beautiful evergreen holly-like foliage, elegant-shaped shrubby plant, bearing numerous large *tube-shaped* brilliant scarlet flowers, each two inches or more long and about half-an-inch across the mouth, render it one of the handsomest *greenhouse* plants. It is supposed likely to prove hardy enough to grow in the open air in Devonshire, or other mild parts of this country. It was discovered by Mr. Lobb, in Patagonia, and sent to Messrs. Veitch, in whose establishment we have seen it in beautiful bloom. It merits a place in every greenhouse. (Fig. in *Flore des Serres*, 988.)

MARANTA WARSCEWICZII.—A handsomely marked foliage distinguishes this fine stove plant. The leaves are of light and velvet-green in shades, with a broad creamy-white midrib, and the underside of a pale red colour, contrasting charmingly with the upper side, and renders it worthy a place in every collection of the ornamental-leaved section of plants.

RHODODENDRON COMTESSE FERDINAND VISART.—A fine hybrid in Mr. Van Houtte's establishment. It belongs to the *R. cinnamomea* section. The leaves are deep green above, and brown underneath. The flowers are large, *bell-shaped*, each being two inches and a half across the mouth, and of a creamy-white *broadly edged* with a bright rosy red. They are produced in *large heads*, and are exceedingly handsome. It is a charming companion for the finest of the Himalayan species, either in the greenhouse, conservatory, or out in the open air. (Fig. in the *Flore des Serres*, 933.)

RHODODENDRON MADDENI.—The flowers are nearly as large as those of *R. Dalhousiae*, very much resembling in size and form the white Day Lily (*Lilium candidum*), white delicately tinged with rose, and very *fragrant*. It bloomed finely in a cool and shaded greenhouse in last May and June. (Fig. in *Bot. Mag.*, 4805.)

SENECIO PRÆCOX.—*Early-flowering Tree Groundsel*. (Synonym, *Cineraria præcox*.) It constitutes a large shrub, growing in the greenhouse, six to eight feet high. It has a thick woody stem, and the flowers are produced in large terminal corymbose heads of a deep yellow. Each blossom (*starry-shaped*) is about two inches across. (Figured in *Bot. Mag.*, 4803.)

ALLOPLECTUS CHRYSANTHUS.—A native of Columbia. The leaves are large; the upper side is like glossy velvet, and underside of a rich violet purple. The flowers are produced in abundance, the calyx of a lively velvety-red, and the petals of a golden yellow. This is a charming addition to the variegated or fine-foliaged stove or greenhouse plants. (In M. Linden's Establishment at Brussels.)

CONTAREA DIERVELLOIDES.—A shrubby plant, also from Columbia. It belongs to the order *Rubiaceæ*. The leaves are in shape like those of the Tartarian Honeysuckle, but much larger, and the flowers in form and size like those of *Weigelia rosea*, a pure white inside; and

bright pink outside, produced in terminal panicles. (In M. Linden's Establishment.)

SCIADOCALYX WARSCEWICZII (Synonym, *Gesneria Regeliana*).—It was discovered by M. Warscewicz on the mountains of Santa Martha, in Columbia. This genus appears to be a type between the *Achimenes* and *Gesneria*. The present species is a vigorous plant, hairy, with large heart-shaped foliage. It is in stature somewhat similar to a robust-grown *Achimenes picta*, and the flowers are very similar, too, to those of that plant. Tube wide, one inch and a half long, scarlet outside, inside yellow, numerous spotted with red. They are produced in profusion, in cymes of small umbels, each usually having three blossoms. It is a handsome flowering plant, requiring similar treatment to the *Achimenes*. (In Mr. Van Houtte's Establishment. Fig. in *Flore des Serres*.)

NEW SHOW-CLASS PELARGONIUMS.—We have taken notes of all the best new ones which are likely to be sent out the coming season, as well as of seedlings shown the first time this summer. Some are improvements on older flowers, but many are not superior to older ones of similar colour.

Phaeton (Foster). A large, well-formed flower; lower petals orange; top petals large dark blotch, shaded off to the margin with scarlet crimson, and smooth on the edges.

Wonderful (Hoyle). A large and well-shaped flower, white centre, with bright rose lower petals shaded with orange, top petals velvety maroon, with narrow carmine margin. Constant bloomer. Gained a first-class certificate at the National Floricultural Society, May 25. (Figured for September, 1854.)

Fair Ellen (Storey). A fine formed flower; lower petals white; top petals a dark blotch maroon, tinged with carmine, and shaded off to the margin with carmine, leaving a well-defined margin of white; smooth on the edges.

Serena (Hoyle). A fine formed flower, having a white centre, and purplish-rose lower petals; top petals nearly black, and margined with purplish carmine. Was awarded a certificate of merit at the National and Royal South London Floricultural Societies.

Seraaskier (Foster). Good formed flower; lower petals bright crimson; top petals a black blotch, with narrow margin of fiery crimson.

Topsy (Hoyle). A striking flower, having a large white centre; lower petals a bright rose; top petals black; very pretty.

Petruchio (Foquett). A large showy variety; lower petals crimson; top petals a rich maroon spot, with crimson margin. A fine variety.

Jessica (Foster). A large fine-shaped flower; lower petals crimson; top petals a dark maroon blotch, and crimson margin.

Pandora (Turner). Lower petals crimson; top petals dark maroon, edged with crimson.

Lord Raglan (Hoyle). A large flower, in the way of *Salamander*, but a brighter colour.

Grand Sultan (Turner). Lower petals a rich crimson; top petals black, with a narrow margin of rich crimson; of good substance.

Yerda (Hoyle). A large flower; lower petals lilac rose; top petals dark maroon, margined with rose.

Hubert (Hoyle). Lower petals bright rosy purple; top petals a large maroon blotch, and a margin of purplish crimson.

Vesper (Cant). A very striking flower, having a *white ground*, and on each petal a dark spot, which are very distinct and beautiful.

Conqueror (Beck). Fine shaped flower, with a light centre; lower petals orange-scarlet, with a dark spot on each; top petals nearly black, with a fiery crimson margin.

Lydia (Beck). Fine form, and light centre; lower petals flesh colour, with a small red spot on each; top petals a rich dark maroon, with a crimson margin.

Laura (Beck). A large and good formed flower; lower petals a rich pink; top petals a large black spot, with its edges streaked, shading off to crimson and pink.

(To be continued.)

ON THE CULTURE OF ACHIMENES COCCINEA, AND OTHERS OF THAT SECTION.

By MR. WILLIAM MASON, GARDENER, CLIFFE HALL, NEAR MANCHESTER.

HAVING promised to send you an account of my mode of cultivating the *Achimenes coccinea*, *elegans*, *formosum*, and others of what are termed the minor growing section, the last time I had the pleasure of accompanying you through the hothouses and greenhouses at Cliffe gardens, on which occasion you so much admired the specimens we had then in bloom, I now with pleasure fulfil my promise. As, however, able articles have appeared on the culture of these most interesting and beautiful plants, I fear that the treatment I am about to describe will not now be so likely to be of any material service to the general readers of your interesting magazine: however, it may be of service to *some* who may not have read what has been previously written on the management of these lovely plants.

In the *beginning of February*, I take the pots that contain the roots of the plants that have flowered the season previous, and carefully take away the surface soil till the small tubers appear. I then fill the pots up with a compost of peat soil, light loam and leaf soil, and give the whole a gentle watering. I then place the pots in a fruiting pine-stove or hotbed frame, the temperature of which is kept from 70° to 85° of heat. I give water *sparingly* for about ten days, but afterwards more freely, so as to effectually moisten the whole of the soil to the bottom of the pots, which will have become dry from having been kept during the winter without water.

When the shoots have attained the height of about three inches, I turn the bulbs out of their pots, and carefully break them till I can divide the young shoots. I then select the strongest, and retain *all the roots* attached to them, and plant singly into sixty-sized pots, in

the same compost as recommended for earthing up the pots, with the addition of one-fifth fine clean sand. I grow the plants in a moist heat and in a *slight shade*, and every day, towards evening, sprinkling them overhead and *underside too* with a syringe or the fine rose of a watering-pan. As they advance in growth and fill their pots with roots, I frequently repot them into pots a size larger till I finally remove them, the strongest plants into *sixteens* and the others into *twenty-fours*, using the same kind of compost, except for the last shifting, at which time I give them pots *two sizes larger*, and I add one-fourth of well-decomposed hothead manure, using the other part of the compost more turfy and open. I am particular in *draining the pots well* at each shifting with plenty of broken pots, and to the depth of one inch at least at the last potting. I examine them at each removal, and take away any suckers that may appear about their stems, and also two or three of their lowest side branches; this tends to strengthen the main stem, and encourages them to make fine symmetrical pyramidal heads. After they are well established, and are beginning to produce flowers, I place them, some in a cooler stove, and others in the greenhouse, being careful that they enjoy as much light as possible, which I find materially enhances the richness and brilliancy of their flowers, and adds much to their general lustre.

After they have done flowering, I gradually withhold water, but do not cut their stems away till they have entirely died down. I keep the dormant roots in the pots, on a shelf in the greenhouse, without any water, till they are again wanted to vegetate.

By the above treatment, my plants of the above-named kinds form bushes from two feet high and eighteen inches through, being both close and elegant, *covered too* with a mass of bloom. I usually have my plants to bloom too from June to November. The vigorous large-leaved section of *Achimenes* I grow *single* plants as large as good-sized currant bushes. I will send the mode of treatment for another month's number.

THE GEOGRAPHICAL DISTRIBUTION OF PLANTS.

By MR. FRANCIS.

THERE are some plants which are found in nearly every country, others are found in only one spot, while more are scattered here and there, throughout particular regions and districts. Some are particular to mountains, others to valleys, plains, woods, streams, bogs, and barren ground. Some grow only upon chalk, others on limestone, gravel, sand, or mud. Some require to be in a state of continual moisture, while classes flourish best in a dry and sandy desert, or upon the face of a naked rock. Strong light is injurious to many, but is absolutely necessary to a far greater number. On a subject extensive as this is, volumes might be written, without exhausting it. The utmost we are enabled to do, is to briefly notice a few general characteristics of the vegetation of distant places. Each country—we may say each village—

has its own peculiar flora, and the plants of one situation are not those of another.

It is admitted as a general fact, that a high temperature is the most favourable to vegetation. Hence, in the tropical regions plants luxuriate, and species abound more majestic in character than those in temperate or cold latitudes. It is nothing uncommon for the tropical trees to attain a height of 150 to 300 feet; and the very grasses, which with us are small and insignificant, are there of gigantic magnitude. The bamboos and canes grow to an astonishing size. The palms, a tribe wholly unknown as natives of our countries, claim the tropics as their own. To them also we are indebted for all those plants which have a spicy and aromatic flavour. These favoured regions give birth to a thousand elegant climbers, and myriads of parasitic plants, of beauty and brilliancy, to which other countries produce no equals. Even the very forest trees are evergreen, and covered in their season with large, handsome, and fragrant flowers. When we cultivate any of these plants, their size is, in our conservatories, far from equalling that which they attain in their native woods and jungles. Yet indiscriminate praise is scarcely just even here. The tropical fruits are too sweet and luscious, and the majority of them far inferior in grateful flavour to those cultivated in our own country. There is neither wheat to gild the fields, nor vines to yield the grape. Their plants are magnificent, varied, and stupendous; but they have nothing of that concentrated beauty, innocence, and charm, which appertains to those of our own hedgerows and flowering knolls.

Proceeding from the tropics southwards, and considering the large continent of Australia, we find its vegetation curious, but scarcely handsome. The leaves of the shrubs are mostly harsh, hard, and dry. Their flowers certainly peculiar, but their fruit good for nothing. Here the tribes of mimosa, protea, and Banksia are extremely prevalent—the lily tribe equally rare, while in the southern extremity of Africa, under the same degree of latitude, the iridææ, amaryllidææ, and liliacææ, hold extensive sway. The country of the Cape of Good Hope may be justly called the richest botanic garden in the world. Not merely the monocotyledonous plants above mentioned, but other classes are found in endless variety. Of the endless family of the heaths we have brought to this country more than 300 species. The stapelias and other succulent genera abound in the sandy deserts—beautiful varieties of the geranium family, and of the mesembryanthemum, nestle on every bank, or climb unheeded over every thicket; yet the “queen of flowers” is absent—no rose greets the traveller’s eye in any part of the southern hemisphere. The islands of the South Sea have their peculiar or general produce. The bread fruit, the banana, and papaw tree—many of the myrtle and nettle tribe and gigantic reeds abound inland—the cocoa nut fringes the shore, and the yam creeps along the sandy beach. Passing to the north of the equatorial regions, we direct our attention to China and Japan. Of these countries, as well as of the centre of Asia, generally so little is

known, that it were in vain to attempt a description of their productions; but in respect to China and Japan, the exquisitely beautiful camellias—some species of which afford the tea of commerce; the *hydrangea hortensis*, the sweet-scented olive, the *pyrus Japonica*, the *Salisburia adiantoides*, the *Weigela rosea*, and that common and favourite variegated shrub, *aucuba Japonica*—all now common in our gardens—serve to show the botanical riches which there abound. China, too, is supposed to have been the original country of the sugar cane, the rice, and the orange. Persia is by no means rich in objects of botanical interest; yet it yields the rose in endless variety—the jasmine forms their hedges—the fig, the apple, and the pistacia nut compose their forests, while melons of much luxuriance are cultivated in the fields. The northern countries of Africa partake of the general character of tropical vegetation. In the moist districts grow the date, the banana, and numerous other palms, while in the deserts nought but the succulent aloes, the mis-shapen cactus, the prickly euphorbia, and other similar plants, are able to survive the long drought to which they are exposed.

Southern Europe is rich in varied, valuable, and beautiful plants. Greece is still a place of flowers, as of song. Italy has been called the "Garden of Europe." Syria and the Mediterranean Islands yield to no country in the beauty and variety of their plants. Spain, Portugal, and France, have each their own productions. In northern Germany, Prussia, northern Russia, Sweden, and Norway, immense forests of larch, pine, and fir-trees, crown every steep, and the juniper and the cloudberry are scattered over every hill. A few degrees of additional latitude diminish materially the number and character of species. In Lapland, we have no longer smiling fields, and hedge-rows green. A dreary waste, with now and then a stunted pine, a dwarf birch, a few scattered grasses, and occasionally a little flower, more hardy than the rest, are all the flowering plants that relieve the monotony of the scene. These little plants are known as alpiners. They are seldom furnished with a stem, but have leaves immediately annexed to the roots—such are primroses, the saxifrages, sempervivums, &c.

In the New World the same general laws are in action, though the vegetables are different from those of the old. The flora of Spitzbergen is as scanty as that of Lapland. Canada and the northern parts of the United States give rise to immense forests of the coniferous family; while the under-ground is composed of bilberries—no heaths attend them, however, as with us. The middle and southern states abound with an infinite variety of oaks, the tulip tree, and the fragrant magnolia. Mexico, Chili, Peru, the West Indies, and countries of correspondent latitude, are tropical in produce. Brazil scarcely less so, while the extreme of the continent, Patagonia furnishes but a few scattered conifers. Thus, a regular gradation in the character of the plants is plainly discernible, from the North Pole to the Equator, and thence to the southern extremity of the world; and an enumeration of the number of species in a few of the countries will show an equal

gradation in amount, as in character. It has been computed that the number of flowering plants growing at Spitzbergen, about 80° of north latitude, is about 30; in Lapland, under 70' of latitude, there are 534; in Sweden 1,300. This extends from the southern parts of Lapland to 55° north latitude; 2,000 in the direction of Brandenburg, between 52° and 54° latitude; 2,800 in Piedmont, between 43° and 46°; nearly 4,000 in Jamaica, between 17° and 19°; in Madagascar, situated between 13° and 24° south latitude, more than 5,000 species of plants have been discovered.

In rising above the level of the sea, vegetation suffers modifications analogous to those we observe in advancing from the equator to the pole. The phenomena, which in the latter case proceed by imperceptible degrees, are strongly marked, and rapidly succeed each other on the sides of mountains. A height of from 12 to 15,000 feet in the hottest countries, produces changes as strongly marked as the distance of 6,000 miles, which separates the equinoctial from the hyperborean regions. Tournefort observed, at the foot of Mount Ararat, the plants of Armenia—a little higher those of Italy and France—still higher those of Sweden. Similar observations have been made of the Caucasus, the Alps, the Apennines, and other mountains of the old continent.

The common oak grows on the plains nearly level with the sea; it ascends the sides of mountains until it reaches the height of 5 or 6,000 feet. Its vegetation is much less majestic as it approaches these heights, where it ceases to grow. The beech only appears at an elevation of 1,800 feet, and finishes its course 600 feet below the oak. The yew-tree is seen at 4,200, reaching as far as 6,000 feet, and the Scotch fir ranges between 6 and 7,000 feet.

The growth of these trees being arrested, shrubs with dry leaves, low and sometimes creeping stems, which remained concealed under the snow in winter, begin to show themselves. These are rhododendrons, mezereons, some species of the willow, the dwarf birch, and the juniper. After these we soon meet with small plants, with perennial roots, their leaves in the form of a rosette, and with naked flower stalks. We first perceive various of the gentians, primulas, saxifraga umbrosa, aizoon, &c. Then the *ranunculus alpestris*, *nivalis*, *parnassifolius*, the *aretia alpina*, and at last the *ranunculus glacialis*; the *saxifraga cæspitosa*, *oppositifolia*, and *Groënlandica*. The last-mentioned plants, mixed with various of the lichens and funguses, attain an altitude of 10,000 feet, and are bounded only by the limit of perpetual snow. Soil, exposure, degree and quantity of moisture, with intensity or deprivation of light, all exert their influence, and modify the natural productions of a district. Our own country exemplifies the remark. Scotland is bleak and mountainous: its plants are of an alpine character—the heath covers the hills; the pine, birch, and beech, compose its woods and hang from its rocks.

Cumberland, Yorkshire, and the Midland Counties, yield species unknown more northwardly. Barley and oats, cultivated in Scotland,

yield to the wheat of England ; the fir is supplanted by the oak ; the viviparous and small grasses and rushes, peculiar to the mountain tops, diminish, and give place to the luxuriant herbage of a milder and lower region—while in the sunny fields of the south, of Kent, of Surrey, and of Devonshire, merry England is seen in all its beauty ; not a hill but is luxuriant—not a valley, nor a hedge-row, nor a river's bank, but is profusely garnished with some of those little lovely flowers which Britain calls her own. One species greets us here, another there—one smiles from a cliff, another blushes from the stream—one, as if conscious of its beauty, offers itself boldly to our view—another, like the violet or the lily of the valley, seems to hide itself only that it may be sought for ; yet, when found, how large a share of fragrance does it yield, and what simple loveliness of aspect and perfection of organisation does it not disclose !

PLANTING TREES AND SHRUBS IN THE PLEASURE GARDEN.

BY A GARDEN ARCHITECT.

THE present season of the year being that in which the laying out and planting of pleasure gardens is usually carried on, and as it is an operation of considerable gardening importance, not merely for the present, but for the future too, to do it as effectually as circumstances admit of, both in forming the ground and arranging the trees, shrubs and flowers, I am induced, as a constant practitioner, to forward some hints in furtherance of so desirable an object.

The style of this sort of a pleasure garden very much depends on the extent, situation, and character of the ground, that I can only, in this place, offer more than general remarks.

The plants which stand nearest the dwelling must be of the dwarfer kinds, and of the most beautiful sorts. The trees, also, should be selected so as to correspond with the style of building. The villa shows best when surrounded by light ornamental trees, such as the birch, the acacia, the sumach, the laburnum, and cypress ; and a clump of poplars and mountain ash interspersed in the front part, to exhibit their pendant heads of scarlet berries, may sometimes be introduced, so as to break the line, with good effect. The cottage may have more rustic trees ; while to the castle belong the oak, the ash and the pine : the mansion admits of all at their proper distance, and in suitable situations.

One of the most important things in planting is to attend particularly to the shades of green, especially where the view from the house or lawn catches the trees. Flowers, which Pliny calls the joys of the trees, continue but for a short period, in comparison to the duration of foliage ; therefore, the picture should be formed by judiciously contrasting the greens. Even the effect of perspective may be considerably increased by the proper arrangement of hues. Trees whose leaves are grey or bluish tint, when seen over or between shrubs of a

yellow or bright green, seem to be thrown into the distance. Trees with small and tremulous leaves should wave over or before those of broad or fixed foliage. The light and elegant acacia has a more beautiful effect when its branches float over the firm and dark holly or bay-tree. In some situations the bare trunk of trees may be shown; in some it should be concealed by evergreens and creepers. Vines, also, may be suffered to embrace it, and form natural festoons, where the extent of ground will allow of wilderness scenery. In all situations nature may be assisted, but should never be deformed by clipping; for ingenuity ought to be employed to disguise art, not to expose it.

The beauty of plants cannot be displayed when they are too much crowded; as they are then drawn up into unnatural shapes. Therefore, the oftener open spaces can be admitted, the more will the shrubs exhibit themselves to advantage, and the more cheerful will be the walk; for it becomes insipid and gloomy when confined for any distance. The winds also claim our attention. Care must be taken so to arrange the position of the trees, that only those gales which are most congenial to the growth of particular plants should be allowed access to them.

The undulating appearance of a plantation will be considerably assisted by a gradual progression from the lowest shrub to the highest tree, and again, from the highest to the lowest. But, as some shrubs will not flourish under certain trees, their respective situations demand consideration. These shrubs may indeed exist under such unfavourable circumstances, but their unhealthy appearance will never be pleasing. Where the shade of any tree is too powerful for laurel or privet to thrive, ivy may be planted with advantage, if it be desirable to cover the ground with evergreen.

In proportion as the shrubbery or plantation recedes from the dwelling, it should become more rural in its character, more especially if the house be in the cottage style. Here climbers, and such plants as require the support of others, are to be introduced. The most delightful groups in a pleasure-ground are generally those where nature, freeing herself from the shackles of art, depends only on her own assistance for support. Her beauty is chiefly to be seen there, where her various creations combine spontaneously, and without restraint.

The means by which these plants raise themselves up, so as to offer their flowers to the sun, are as various as they are curious, and they seldom blossom whilst trailing on the ground. The ivy and bignonia ascend by the help of little fibres, which fix themselves to the bark of trees or crevices in walls so tightly as to render their disengagement a difficult thing to be accomplished without injury to the trunk or building they are attached to. The honey-suckle, like the hop, twines itself spirally around the trunk or branches of trees, and often clasps them so closely as to make an impression on the hardest timber. Others, as the vine and passion-flower, rear themselves by means of corkscrew tendrils, which hold so fast that the strongest winds seldom disunite

them from their support. Some plants climb by means of a hook in their leaf-stalk, or have a kind of vegetable hand given them, by which they are assisted in mounting, as the pea and several others.

To return from this digression.—The sombre, gloomy walk of yew, cypress, or holly, should lead to the spot from which there is the most beautiful prospect, or to the gay parterre, where Flora has diffused her flowery beauties; as the contrast, particularly if sudden, adds greatly to the cheerfulness of the terminating view.

Bad taste is seldom more conspicuous than when we see trees or plants marshalled in regular order, and at equal distances, like beaux and belles, standing up for a quadrille or country dance. Where the situation will permit, four or six lilacs should be grouped in one place, and as many laburnums in another, so as to give effect in various parts by a mass of colour.

The guelder rose should appear as if escaping from the dark bosom of evergreens, and not a plant should be set in the ground without adding to the harmony of the whole. A shrubbery should be planted as a court or stage dress is ornamented, for general effect, and not particular and partial inspection. Boldness of design, which seems to be more the offspring of nature and chance than of art and study, should be attempted; but though boldness is what the planter should aspire to, all harshness, or too great abruptness, must be avoided, by a judicious mixture of plants whose colours will blend easily into one another.

The most beautiful shrubs should occupy the most conspicuous and prominent places. For instance, a projecting part of the plantation should be reserved for the purple rhododendron, the flaming azelea, and other bog plants. Here it must be observed, that unless proper soil be provided for these American plants, the cost of the shrubs will be lost, as they will soon decay when not placed in earth congenial to their nature. With these shrubs may be planted the hardy kinds of heath, as the same soil suits both species. With respect to evergreens, considerable judgment is required, in order to relieve their uniform appearance during winter. This may be done by skilfully arranging different kinds, and those with variegated leaves, or such as retain their brilliant berries during the cold months.

However, a well planted shrubbery depends not so much for its beauty on the expense or rarity of the plants it contains, as on the selection of trees and shrubs which succeed each other in blossoming throughout the year, or whose various-coloured fruits grace them for the longest duration of time. We shall, therefore, not dwell upon those plants alone that are the ornaments of the summer season, but also point out some that will contribute to the gaiety of morning and evening of the year; so that the gloom may be banished at all times as much as possible from the grove, and nature's repose shortened between the plaintive good-night of autumn and the cheerful good-morrow of spring.

The subject will be resumed in another number of this magazine.

OBSERVATIONS ON THE IMPORTANCE OF AFFORDING TO PLANTS A SEASON OF REST.

BY KEWENSIS.

THE vast importance of affording to plants a season of repose, as well as one of stimulation and excitement, is sufficiently attested by a glance at the arrangements of nature; where we may continually observe some plants receding to a quiescent state, and others springing up with vigour, and rapidly unfolding, and developing their peculiar grace or beauty. It is in connection with this branch of the floricultural art that the study of the geography of flowers becomes important; for, though all plants require, and naturally receive, a season of rest, yet the circumstances under which it is brought about, no less than its duration, becomes a subject of diversity, almost as endless as the nature of the plants themselves. The Cacti of Mexico, the bulbous progeny of the Cape, and the commonest weed in our own country, all require and enjoy their own peculiar season of repose, the difference being only in degree, and not in principle; and even in the most favoured parts of the world, the Tierra templada of Mexico, where, at the height of 4,000 to 5,000 feet, there reigns continually the genial climate of spring, the excess of heat and cold being alike unknown—even in this favoured region the same principal is in operation: for at Xalapa, which forms part of it, the *Ipomœa purga*, a native of woods there, is found to die down annually in precisely a similar manner to our own *Convolvuli*. In the case of evergreen shrubs, in our own stimulating climate, where, notwithstanding coldness, we have continually a degree of humidity, almost sufficient to keep the vegetable kingdom in a state of excitement—even here, these trees and shrubs, if not as in other cases positively reduced to a stationary condition, yet have their vital energies so far subdued for a season, that they may be said to enjoy a repose peculiar to themselves, accompanied, and perhaps produced in this case, by atmospheric coldness.

It is not, however, a depression of the ordinary temperature that constitutes at all times the winter of the vegetable race; for we sometimes may observe plants, especially bulbous-rooted ones, die down entirely during the summer months, and spring up again either on the return of autumn or spring. In tropical countries, dryness, more particularly than coolness, is a mark of the resting season; the summer being, on the other hand, excessively humid. In extra tropical countries the variations of heat and cold, aridity and humidity, are considerable, occasioned generally by local causes. Some tracts of country, which in winter are excessively cold, are during summer intensely hot; such is the case at Bagdad, in some parts of Persia, America, and Mesopotamia; whilst at the Cape, where the temperature does not undergo such fluctuation, the periods of dryness and of deluging rains are found to alternate with each other. The Karroos, a very extensive district of plain country at the Cape, are submitted to this kind of alternation; they are destitute of running water, with a soil of clay and

sand lying on the solid rock. In the dry season this is reduced, by the action of the sun upon it, to nearly the consistency of a brick; the tribes of succulent plants have alone the power of remaining green, the bulbs and iridaceous order being decayed, and beneath the surface; notwithstanding the heat, they are able to survive beneath the sun-burnt crust, because it is now that they are enjoying a state of repose, to which nature has submitted them, and which appears to be necessary to their existence. As soon, however, as the wet season returns, these bulbous roots are reached by the rains, they swell while in the bosom of the earth, and at last develop themselves so simultaneously that the before desert plains become at once converted into a seat of verdant beauty. After these the *Mesembryanthemums* and *Iridacæ* display their brilliant flowers; but these in a few weeks disappear, their verdure fades, and hard dry stalks alone remain; the rains have ceased, the hot sun of August, when in those latitudes the days begin to lengthen, complete the destruction of the stragglers which were left, and the plain again sinks into aridity and desolation. In other parts of the globe the temperature is considerably increased during the season of rest, of which the Canaries afford an example; whilst in tropical countries the seasons of growth and rest are equally marked by the periodical rains and alternate drought.

From what has been said, it must be evident that the cessation of growth in plants is a most important phenomenon, occurring equally in hot and cold countries, and, therefore, not applicable in its artificial adoption to one particular class of plants, but alike to all; under no circumstances ought it to be overlooked, for there can be no really good gardening where this is either neglected altogether or unduly attended to.

It will have become evident, that the rest of which we are speaking is brought about in one of two ways; either by a considerable depression of the ordinary temperature, or by a degree of dryness, under which vegetation becomes suspended. The former generally takes place in temperate latitudes, and the latter in more tropical regions: but both are assimilated, in a greater or less degree, in all latitudes; and hence arises the importance of geography in gardening, to enable a person, when once made acquainted with the name of the locality from whence a new or valuable plant is brought, to imitate not only the temperature, but also the variations of its seasons.

The way in which the physical powers of vegetables are affected by this, becomes a question of importance, and the following will supply the necessary information:—"The long days, bright light, and elevated temperature of summer, having pushed the powers of vegetation to their limits, towards the end of the season excitability becomes impaired, all the vessels and perishable parts are worn out; leaves choke up, and can neither breathe nor digest; and the system of a plant, by the exhalation of aqueous matter, becomes, as it were, dried up and exhausted. At that time, the temperature keeps falling, and light diminishing, till at last, upon the arrival of winter, neither

the one nor the other is sufficient to excite the vital actions, and the plant sinks into comparative repose. At this time, however, its vital actions are not arrested; if they were, it would be dead, or absolutely torpid: they are only diminished in intensity. The roots continue to absorb from the soil food, which is impelled slowly into the system, whence it finds no exit; it therefore gradually accumulates, and in the course of time refills all those parts which the former summer's expenditure had emptied. In the meanwhile, the excitability of the plant is recovered by rest, and may be even conceived to accumulate with the food that the absorbent system of the roots is storing up. At length, when the temperature of the season has reached the requisite amount, excitability is once more aroused, an abundance of liquid food is ready to maintain it, and growth recommences, rapidly or slowly, in proportion to the amount of excitement, the length of previous repose, and to the quantity of food which had been accumulated.

In hot countries, where winter (in its general acceptance) is unknown, the requisite periodicity of stimulus and rest is provided for by what are called the dry and the rainy seasons; the former being equivalent to the winter, and the latter to the summers of the northern latitudes."—*Theory of Horticulture*.

The adaptation of these principles in the cultivation of exotic plants, forms one of the most important offices of the gardener; but it is not in this way alone that the knowledge of the benefit of resting plants becomes subservient to his interests. One of the tasks which he has to perform, and one of the most precarious, is that of producing both flowers and fruit, at an unnatural season, and having learned that he cannot do this successfully, without previously affording his plants an imitation of winter, he puts this knowledge into active exercise; and hence it is that he removes his lights from the vineries and peach-houses, and places them which are removable in a northern situation, and deprives them of a portion of their fluid food. The effect of this treatment is to arrest the growth of the plants, and to favour the deposition of the matter necessarily required for the produce of the succeeding season. It is by this knowledge of the proper time and mode of resting flowering plants, that they are brought to bloom at seasons altogether foreign to their natural habits; and in the cultivation of all plants it is the means of increasing, both in quantity and quality, the blooms produced by an individual plant. It is this knowledge that enables the culturist to receive with satisfaction and assurance what to him are the unknown productions of foreign lands, and which enables him to cultivate them in their artificial habitations, and sometimes to eclipse the splendour which they assume in their native habitats.

REMARKS ON THE COMPARATIVE MERITS OF POROUS AND GLAZED FLOWER POTS.

BY THE FOREMAN OF A LONDON NURSERY.

THE construction of garden pots having of late been a subject of some public interest, and opinions having been advanced, which, to say the least in their favour, have novelty on their side, it becomes a matter of importance to watch rather closely the arguments which have been advanced in their support, in order that some idea may be formed of the nature and extent of the claim which they have upon the attention of the cultivator.

As far as regards the shape and proportions which are recommended, I think them the best that can be devised, whether their usefulness or elegance be taken into consideration; but as regards the other particulars of their construction, I am inclined to believe, that however plausible the arguments may be which are brought forward in their support, there will be many obstacles to hinder their adoption. I do not think that the objection urged against porous pots, on the ground of their absorbing qualities, which would afterwards prove deleterious to plants placed in them, has much force; for, supposing and allowing, as has been remarked in a previous number,—viz., that of the stinking roots of an *Acacia*,—allowing that in this instance the effect would be injurious, it must at the same time be borne in mind that not one in a hundred of the plants cultivated in pots impregnate those pots with any unpleasant smell; and in the case of those which are so circumstanced, if laid by for a time and exposed to the action of the weather, the objection would be entirely groundless.

The objection that the pots in common use are inelegant and unpicturesque, may have some force when they are placed in situations intended as decidedly ornamental. So far the glazed pots recommended by your correspondent, "*Londinensis*," might be deemed preferable.

He further remarks, that "as regards nursery and forcing departments, where pots are little seen except by workmen, the common porous flower-pot may answer;" so that here is a plain admission that it is not to their use for the purpose of culture, but in an ornamental point of view, that he objects to the use of porous pots. "For the finer ornamental plants," he continues, "whose habits require compost and treatment almost as various as the countries they come from, it is necessary that the pot should be as clean as a drinking cup, so as in no way to interfere by admixture of its properties with the compost proper for the plant." This, although sounding very plausible to the ear, I cannot regard as having any weight as an argument, believing that if decency and cleanliness are strictly kept in practice, as they ought to be, there is nothing in the ordinary use of pots which can be absorbed so as to contaminate the soil which might afterwards be placed within them, to the injury of even the most delicate-rooted plants.

As regards the objection to placing the roots of various plants, originally inhabitants of earth, air, and water, all promiscuously in

contact with burnt clay, very little of reflection will be sufficient to convince any one that the same remarks would apply equally to any other kind of pots, whether glazed or otherwise.

The use to which glazed pots seem most applicable, by the nature of their composition, is that of the cultivation of aquatics, and bog or marsh plants; the effectual prevention of evaporation through their sides and bottom, would, in all probability, render them well adapted for these kinds of plants, and, in this respect, the use of crockage as drainage might also, in all probability, be readily dispensed with.

One objection to glazed pots, in the culture of many kinds of plants, even if there were no other with which to oppose them, is the smoothness of their inner surface; any one who has paid attention to the rooting of plants in pots, must be aware that many kinds delight to root amongst the broken crockage, and about any irregularity of surface in the pot: this would appear to have some assimilation with the fissures of rocks, in which it is known that some kinds delight to root; and, if this be the case, the smooth glazed pots, and the absence of all crockage, as recommended, might render them still less valuable.

The great objection, however, to glazed pots, is the simple fact that they are *not porous*, and this brings me to notice briefly the advantage of those in common use over those recommended by "*Londonensis*." The air is composed of certain gases, which are taken up by and are the food of plants; these gases are absorbed in various forms, both by the roots and leaves of plants; and therefore it is that, in a certain degree, atmospheric air is as necessary to the spongioles as it is to the foliage of the vegetable race; hence the deep burying of the roots of trees, which is found to be injurious, and is accordingly deprecated; and hence it is, also, that in the culture of those trees in which horticultural science is more immediately concerned, we find shallow borders *now* recommended, and the roots to be disposed in such a position as to be near the surface of the soil: the reason of this is, that the air may penetrate the soil sufficiently to reach the spongioles, so as to be taken up by them as food. In the culture of plants in pots, the porosity of the sides of the latter will permit the atmospheric air, composed of vital gases, to penetrate through into the soil, and thus the healthiest roots are always found in contact with the pot; but in the case of glazed pots, this percolation could not take place, and the surface of the soil alone would be exposed in any degree to the action of the atmosphere; consequently the plants would be deprived of a great portion of their nourishment. This would not be a matter of importance, provided that the roots could extend themselves horizontally to their full extent, as in that case a sufficiency of air would penetrate through the soil; but it must be recollected that the roots of plants in pots are not so circumstanced, but, being checked by coming in contact with the pot, they are obliged to descend, and, therefore, the whole surface of the pot becomes to them an equivalent to the surface soil enjoyed by an unconfined plant. Were it possible to combine in a garden pot the transmission of air through its sides, and yet to check the too rapid

evaporation which sometimes takes place, such a combination would be the *ne plus ultra* of pot manufacturing.

SUCCESSFUL PLANTING OF EVERGREEN TREES AND SHRUBS.

BY A BAGSHOT NURSERYMAN.

THE subject of successfully transplanting evergreen trees and shrubs having been inquired about by several correspondents, I forward for insertion in an early number of the *Cabinet* the following remarks thereon, being the result of a thirty years' observation and practise as a nurseryman, who cultivates upwards of twenty acres of evergreens.

It is admitted that the leaves of a tree contribute to the production of roots, consequently the period when they exert the greatest influence in that particular is the best period to plant in. From October to January, it is evident, the leaves of evergreens are in their state of maturity, and then possess the greatest power of active agency, and are best prepared to sustain the effect of a removal, as well as contribute to a re-establishment of the plant. Another advantage in planting at this season (or as near as circumstances will admit) is, that the state of the atmosphere is more congenial by being moist and cool, instead of as is generally the case, more or less at other seasons, being in a dry and parching condition. I admit that early in spring the atmosphere is not so objectionable as at a late period of it. The condition too of the soil in autumn is better than in spring, the effect of the summer's sun giving it internal warmth, which, as is well known by gardeners, has a good deal to do in promoting an immediate pushing of the fibrous roots into fresh soil. Any person placing a thermometer imbedded several inches deep in the soil in October, and then again in March, will find that at the latter period it is many degrees lower than at the former. The advantage of a higher temperature, in connexion with the congenial state of the air, is of the first importance to success.

In transplanting, every fibrous root that can must be retained, and as much soil adhering thereto. At whatever time the planting takes place, the soil should be well watered to cause it to settle closely to the roots. Where these latter attentions, and sprinkling over the tops are paid, and successively followed up, planting may with some success be performed at other seasons of the year; but after an experience with many hundred thousands of evergreens, in all kinds of situations, I can safely recommend the season I do as that in which they may be far more successfully transplanted than at any other, and the extra trouble necessarily required when done at an unfavourable time, even to secure a very partial degree of success, is avoided. Where evergreens are planted in situations much exposed to cutting winds, a temporary screen during winter is of essential utility. Such may be constructed of fir or other branches interwoven through palings, &c.

MISCELLANEOUS.

EXHIBITION OF HOLYHOCKS.—A most extensive show of these noble flowers was held at the Surrey Zoological Gardens, on August 22nd. The quantity and *superb quality of the flowers* "very far exceeded" those of any former exhibition which has been held in London, and, we may safely add, anywhere else. The size of many of the blooms, perfection in form, and substance in petals, were really marvellous, and displayed the vast improvement which has within but a few years been effected with this magnificent genus. To the following collections were awarded prizes:—

Nurserymen, &c.—1st prize (of eleven spikes), Mr. Bircham, of Hedenham, near Bungay, in Suffolk, who exhibited, Yellow Model, Pourpre de Tyre, Solfaterre, Felicia, Unique, Comet, Criterion, Lilac Model, Queen of Denmark, Brennus; these were large, clean, even, and of first-rate quality. 2nd. Mr. William Chater, of Saffron Walden, Spectabilis, Admirable, Lady Braybrooke, Sulphur Queen, Walden Gem, Meteor, Joan of Arc, Pourpre de Tyre, White Globe, Hon. Mrs. Ashley, Comet. 3rd. Mr. C. Turner, of Slough; Orestes, Duchess of Sutherland, Pourpre de Tyre, Yellow Model, Souvenir, Eugenia, Eva, Emperor, Walden Gem, Mrs. Foster, Charles Turner. 4th. Messrs. A. Paul and Son, Cheshunt, with Pourpre de Tyre, White Globe, Lizzy, Magnum Bonum, Charles Baron, Beauty of Cheshunt, Sulphur Queen, King of Roses, Metropolitan, Eugenia, Aspacea. Cut blooms in twenty-four distinct varieties. 1st. Mr. Turner, with Agricola, Lizzy, Walden Gem, Susannah, Charles Turner, Emperor, Purpurea, General Bem, Pourpre de Tyre, Orestes, Sulphur Queen, Sir David Wedderburn, Felicia, Hope, Souvenir, Pillar of Beauty, Hon. Mrs. Ashley, Shaded Model, Beauty of Cheshunt, Eleanor, Black Prince (new), Eugenia, Duchess of Sutherland, Ovid. 2nd. Mr. Chater, with Enchantress, Safranot, Black Prince (new), Rosy Circle, Brennus, Mulberry Superb, Golden Fleece, Lady Neville, Seedling, Charles Lidgard, Souvenir, Comet, Eugenia, Seedling No. 2, Hon. Mrs. Ashley, Elegans, Sir D. Wedderburn, Lilac Model, Seedling Yellow No. 1, Walden Rival, General Bem, Emily, Pourpre de Tyre, Sulphur Queen. 3rd. Mr. Bircham.

Private Growers.—Spikes in seven varieties: 1st. Mr. Roake, of Clewer, near Windsor, Julia, Pourpre de Tyre, Sulphur Queen, White Globe, Walden Rival, Beauty of Cheshunt, Hon. Mrs. Ashley. 2nd. George Holmes, Esq., Brooke Lodge, near Norwich, with Elegans, Penelope, Pourpre de Tyre, Lemonade, Warrior, Meteor, Challenger. 3rd. Mr. Benningfield, Broxbourne, Essex. 4th. Mr. Glascock, Bishop Stortford. 5th. Mr. Dyson, Stoke.

Twenty-four cut blooms in twelve varieties: 1st. Mr. Roake with Seedling No. 1, 1854, Ovid, Joan of Arc, Walden Rival, Pillar of Beauty, Hon. Mrs. Ashley, Charles Lidgard, Julia, Pourpre de Tyre, Souvenir, Shaded Model, Sulphur Queen. 2nd. Mr. Long, Watford,

with *Pourpre de Tyre*, *Yellow Model*, *Hector*, *Emily*, *Sir D. Wedderburn*, *Joan of Arc*, *Comet*, *Orestes*, *Susannah*, *General Bem*, *Shadep Model*, *Eva*. 3rd. *Mr. Benningfield*. 4th. *Mr. Grant*, gardener to *R. Fellowes, Esq.*, *Shotesham Park*, near *Norwich*. 5th. to *Mr. Dyson*. The prize for the finest spike was selected from *Mr. Bircham's* collection, and was a beautifully grown *Mrs. Ashley*; it was, however, very closely contested with a spike of *Lady Braybrook*, exhibited by *Mr. Chater*. The best single bloom was exhibited by *Messrs. Paul*, who produced bloom of their *Beauty of Cheshunt*.

There was a number of seedlings; the judges selected *Bircham's Purple Perfection* as the best; this is a full-sized, fine-shaped flower, in the way of *Pourpre de Tyre*, but more purple. It is unquestionably a first-class flower. He showed, too, the following:—*Schamyl*, a dull bronze buff, was awarded a certificate. It is a flower of first-rate form. *Mr. Bircham* also received a certificate for his *Empress Primrose*, which is a valuable acquisition. Also *Jenny Lind*, a good light flower. *Lemonade*, a beautiful smooth flower, pale canary, with purple at the base. *Hidalgo*, *La Fourtinette*, *Bronze Yellow*, *Hedenham Rival*, and *Nugget*. The latter a rich deep yellow, but not of good shape. *Mr. Chater* sent a large fine yellow, No. 1, which will prove a fine acquisition. In the collections we observed some fine seedlings were placed; the best was *Walden Rival*, raised by *Mr. Roake*, a mottled orange, quite new in colour, and of the finest quality. *Julia*, a mottled orange, is attractive in colour, and a showy flower. *Solfaterre* (*Bircham*) is a large clear *Primrose*, or pale yellow, a good spike, and a full close flower.

The following we thought were the best twelve flowers shown:—*Joan of Arc*, blush-pink. *Comet*, crimson. *Lady Braybrooke*, rich rose. *Beauty of Cheshunt*, light rosy red. *Pourpre de Tyre*, rich purple. *Eugenie*, sulphur and buff. *Charles Turner*, rosy crimson. *Hon. Mrs. Ashley*, blush. *Julia*, rosy orange. *White Globe*, pure and large. *Purple Perfection*, a very deep colour, and *Walden Rival*, mottled orange.

PELARGONIUMS shown at the ROYAL BOTANIC SOCIETY, REGENT'S PARK, on May 24th, occupied two sides of the lower series of terraces, and being generally well grown they made a good display. 1st, *Sanspareil*, *Colonel of the Buffs*, *Challenger*, *Exactum*, *Mochanna*, *Magnificent*, *Lablache*, *Rosamond*, *Queen of May*, *Enchantress*, *Virgin Queen*, and *Magnet*; 2d, *Governor Leah*, *Purpureum*, *Vanguard*, *Gulielma*, *Arethusa*, *Pasha*, *Delicatum*, *Glow-worm*, *Empress*, *Rosamond*, and *Ambassador*. Fancies, six varieties: 1st, *Madame Sontag*, *Madame Rosati*, *Defiance*, *Delicatum*, *Anais*, and *Princess Maria Galitzin*; 2d, *Defiance*, *Fairy Queen*, *Delicatum*, *Signora Casolini*, and *Odoratum magnificum*. Amateurs: 1st, excellent plants of *John Bull*, *Duchesse d'Aumale*, *Fairy Queen*, *Statuiski*, *Madame Meillez*, and *Princess Maria Galitzin*; 2d, *Advancer*, *Jenny Lind*, *Empress*, *Alboni*, *Triumphant*, and *Hero of Surrey*; 3d, *Mirandum*,

Jenny Lind, Fairy Queen, Delicatum, Advancer, and Princess Maria Galitzin. This class consisted of no fewer than nine collections, all of which were very creditable to their respective growers.—Amateurs: 1st, Purple Perfection, Alibi, Lucy, Enchantress, National, Ariel, Eleanor, Queen of May, and Rosa. These, as will be seen, were mostly new sorts; 2d, Constance, Clio, Norah, Emily, Forget-me-Not, Lalla Rookh, Virgin Queen, Ariadne, Prince of Orange, and Enchantress.

Among SEEDLING PELARGONIUMS were Grand Sultan, a sort with dark top and rich red lower petals, each of the latter having a dark spot—a striking kind, with a good habit. Pandora, similar, but less attractive, and without spot on the lower petals. Una, a good useful white, in the way of pearl. Petruchio, a large showy crimson; but coarse and thin. Conqueror, like the Grand Sultan and Pandora in colour, and good in quality, and attractive. Wonderful, a large flower of fine colour and form, throat white. Serena, dark, with pale centre, very promising. Lord Raglan, in the way of Salamander, and therefore very showy; and Topsy, top petals very dark.

Shown on *June 21st*.—Nurserymen. 1st, for twelve, Majestic, Exactum, Ringleader, Magnet, Rowena, Juliet, Virgin Queen, Optimum, Beatrice, Topsy (upper petals absolutely black), Ganymede, and Enchantress. Second, Vulcan, Delicatum, Neatness, Ajax, Rosamond, Arctusa, Ambassador, Diadem, Star, Harriott, Exhibitor, and Mont Blanc. Third, Alonzo, Selina, Eurydice, Constance, Optimus, Mochanna, Cuy, Nandee, Electra, Star, Pandora, and Conspicuum.—Clark's were Orion, Conspicuum, Narcissus, Pearl, Magnificent, Vandyke, Forget-me-not, Virgin Queen, Boule de Feu, Centurion, Alonzo, and Bertha.

In collections of ten. Sunrise, Ariel, Phaeton, Autocrat, Cloth of Gold, Optimum, Magnet, Enchantress, Attractive, and Purple Perfection. 2nd, Carlos, Star, Claudiana, Pearl, Nora, Enchantress, Magnificent, Mochanna, Sarah, and Centurion. 3rd, Cordela, Rowena, Pride of the Isles, Optimus, Virgin Queen, Astrea, Exactum, Pulchra, Novelty, and Star. 4th, Constance, Pride of the Isles, Centurion, Negress, Bertha, Salamander, Magnet, St. Swithin, Nectar Cup, and Rowena. 5th, Centurion, Beauty of Montpellier, Constance, Mary, Conspicuum, Magnificent, Magnet, Loveliness, Alderman, and Satisfaction.

FANCY GERANIUMS, six.—1st, Gaiety, Perfection, Delicatum, Beauty Supreme, Celestial, and Barbette. 2nd, Magnum Bonum, Fairy Queen, Richard Cobden, Princess Marie Galitzin, Cassandra, and Celestial. 3rd, Advancer, Madame Ugald, Princess Marie Galitzin, Fairy Queen, Delicatum, and Clara Novello. 4th, Princess Alice Maud, Reine de Français, Formosissimum, Alboni, Richard Cobden, and Perfection. 5th, Magnifica, Parodii, Statuishi, Duc d'Aumale, Prince Albert, and Fairy Queen. 6th, Queen Superba, Electra, Empress, Caliban, Modesta, and Reine de Français.



HOLLYHOCKS.—Now make new plantations of these noble flowers. Auriculas and Polyanthuses, Carnations, Pinks, &c., should be placed in their winter quarters, in a dry, sunny, sheltered spot, where a free circulation of air can be admitted on all proper occasions. Any plants out in the open beds, as Lobelias, &c., should be taken up and potted, for winter preservation, in pits, frames, &c. Chrysanthemums grown in the open ground, and required for blooming in-doors, should be taken up as entire as possible, and be potted with due care. All tender kinds of plants, as Scarlet Geraniums; Verbenas, in fact every kind requiring winter protection, should be housed *immediately*; it is bad policy to put it off a single day longer. All plants like light; place them as near to the glass as convenience will allow. Prepare the Tulip-bed.

DAHLIAS.—Let the *crown* of the roots be covered with a few inches deep of soil around the stems. Beds of Pansies be made. Shrubs of all kinds may be planted. Roses now planted soon push new roots, and become well-established before winter; the soil being somewhat warm, excites the roots immediately. Pinks, also, may be planted in beds.

SHRUBS, &c., FORCING FOR WINTER BLOOM.—Such as are to bloom early should be gradually prepared, potted immediately, if required, and, by the middle of the month, introduce such as are desired to bloom by Christmas, into the house or pit. The kinds which are well-deserving such attention are Roses, Honeysuckles, Jasmines, Poinsettias, Azaleas, Kalmias, Persian Lilacs, Andromedas, Tree Carnations, Pinks, (of which Anne Boleyn is the best), Rhododendrons, Rhodoras, Deutzias, Ribes, Spirea Prunifolias, Mezereums, Gardenias, Cupheas, Heliotropes (the new blue is fine), Scarlet Pelargoniums, Cactuses, Branthemums, Justicias, Salvias, Gesnerias, Correas, Chinese Primroses, Acoites, Mignonette, Primroses, Cinerarias, Stocks, Persian Iris, Crocuses, Cyclamens, Sweet Violets, Hyacinths, Lilies of the Valley, &c. Seeds of many annuals should now be sown in the border, and others in pots; such will bloom early next spring. Brachycoma, Schizanthus Retusus and Hookerii, Rhodanthe and Salpiglossis seeds now sown in pots, plants potted off when strong enough, will bloom vigorously next spring.

IN THE GREENHOUSE, &c.

If the stock is not housed, it ought to be done *immediately*. Care must be taken so that one plant may receive something like its proper treatment without interfering materially with the well-being of its neighbours; and the tender ones must be placed in the best part, for protection from cold wind, &c., Pimeleas, Leschenaultias, Aphelxias, Boronias, Gompholobiums, and Diosmas, are injured by being placed where there is a *current* of wind. Let each plant have all the space possible, and the robust large-leaved kinds, and the very slender delicate sorts should be kept as *separate* as can be arranged, so as to allow a due circulation of air. Be careful that the pots, &c., be perfectly clean before arranged for their winter situation. Repot Cinerarias, &c. Let Camellias which are to bloom early be placed in a warmer situation, also any Chinese or Indian Azaleas, so that they may be gradually advancing. In watering the stock of plants, let it be done in the *early part* of the day, so that any excess may be dried up before *evening*, and damps be avoided, otherwise mouldiness will ensue. Thin away the flower-buds of Chrysanthemums;

water occasionally with liquid manure. Calceolarias—pot off seedlings to bloom next season.

PELARGONIUMS.—The plants headed down some weeks back, have down pushed shoots an inch or two long; these should be thinned properly. The plants must be repotted, in order to have the roots well established before winter. Shake of the soil, and shorten some of the long roots, so that young ones be promoted, which is essential to the vigour of next bloom. Have a free drainage in the pots. Compost, turfy loam well chopped up, with an equal portion of sandy peat and well-rotted leaf mould, and half the quantity of well-rotted dung. Give air to the plants in the daytime, and be careful not to give over much water at the roots, for if saturated they will be injured. Young struck plants should have the tops pinched off, to cause the production of side-shoots to render them bushy for next season. Repot some of the **SCARLET GERANIUMS** (so called) to bloom during the autumn and winter; they are charming ornaments. So with the new *Tree Carnations*, of which there now are many very beautiful distinct varieties, deserving a place in every greenhouse and sitting-room.

BRIEF REMARKS.

POINSETTIA PULCHERRIMA, AND BEDREWING PLANTS OVERHEAD.—In a recent number of the *Révue Horticole*, a French publication, M. Delaire protests strongly against bedewing hothouse plants, &c. overhead in the morning, or in mid-day, as is practised by some persons. Dew in the open air falls in the evening, clings to plants during night, and disappears after sunrise. In-doors bedewing plants should be in the evening, as at that period there is not any perspiration going on by them, but all the surface is engaged in *absorption*, and thus repairs the loss of fluid during the day-time. What takes place in the open air, similarly occurs in the stove, so far as waste of fluid is concerned, but there is little restoration *there* during night, and the process of artificial bedewing at evening becomes essentially necessary.

M. Delaire has been remarkably successful in the cultivation of the beautiful, showy *Poinsettia pulcherrima*. It was treated as follows:—

It was planted in the open border at the back wall of an Orchid stove. In the spring of 1852 it was a long-legged plant, with four arms, which had been cut back after flowering. These arms had each formed two strong laterals, which, as usual, lengthened without branching. Had the plant been then left to itself, as is often the case, the specimen would have been poor and starved. But each lateral was pinched back to three eyes, from which secondary branches soon proceeded, which, in their turn, were pinched back like the others, and the same process was repeated till the month of October. By this time the shrub had formed a heap of verdure above six feet wide, and had more than 100 branches, each of which produced its tuft of scarlet plumes. What a magnificent plant it was! M. Delaire bedewed this plant in the evening, and the soil was a mixture of peat, decayed vegetable mould, and loam in equal parts.

NATIONAL TULIP SHOW, Royal Botanic Gardens, Regent's Park, May 24th.—*Stands of Six Blooms.*—1. Mr. Parkyn, Derby, with Pilot, Triomphe Royale, Gibbons's Salvator Rosa, Heroine, Sovereign, and Maid of Orleans. 2. Mr. Lawrence, Brown's Ulysses, Bloemart, Triomphe Royale, Maid of Orleans, Arlette, and Glory of Abingdon. 3. J. Thornilly, Esq., Maid of Orleans, Heroine, Charles X., Queen Charlotte, Lachesis, and Pilot. 4. Mr. J. F. Wood, of Nottingham, Platoff, Heroine, Norwich Baguet, Sir Joseph Paxton, Aglaia, and Queen Charlotte. 5. Mr. Spencer, Sovereign, Victoria Regina, Heroine, Captain White, Lord Denman, and Triomphe Royale.

Stands of Twelve Blooms.—*Amateurs.*—1. Rev. S. Creswell, Radford, Nottingham, with Polyphemus, Bloemart, Prince Arthur, Aglaia, Lady Denman, Strong's King, Vicar of Radford, Princess Royal, Sphinx, Triomphe Royale, Mary Lamb, and Prince of Wales. 2. R. H. Betteridge, Esq., Countess of Harrington, Glory

of Abingdon, Madame Catalani, Royal Sovereign, Mary Anne, La Belle Actrice, Triomphe Royale, Thalia, Triomphe du Monde, Everard, Polyphemus, and Claudiana. 3. Mr Sanders, Victory, Earl Douglas, Claudiana, Enchantress, Acapulca, Thomas Brown, General Barneveldt, Marcellus, Ariadne, Maid of Orleans, Duchess of Sutherland, and Surpasse Catafalque. 4. J. Thornilly, Esq., Charles X., Rufus, Heroine, Antagonist, Gibbons's Salvator Rosa, Princess Sophia, Polyphemus, Princess Royal, Triomphe Royale, Criterion, and Surpasse Catafalque.

Stands of Eighteen Blooms.—1. Mr. Lawrence, Hampton, Middlesex, Dickson's Duke of Devonshire, Madame Vestris, Nora Creina, Polyphemus, Rose Lucetta, Bloemart, Elthiron, Captain White, Lady Wildair, Thalia, Earl Douglas, Mountain Sylph, Triomphe Royale, Queen of the North, Pilot, Lawrence's Sarah, Maid of Orleans, and Vivid. 2. Mr. J. F. Wood, the Coppice, Nottingham, Apelles, Walker's King, Vicar of Radford, Triomphe Royale, Beauty of the Plain, Brown's Salvator Rosa, Sir J. Paxton, Magnum Bonum, Heroine, Aglaia (flame), Lady Denman, Rembrandt, Everard, Vivid, Kate Connor, Aglaia (feather), Queen Charlotte, and Lady Flora Hastings. 3. Mr. C. Turner, Slough, Bucks, Chellaston Rose, Bijou des Amateurs, Pilot, Alexander Magnus, Claudiana, Princess Royal, Mary Lamb, Hamlet, Madame Vestris, Vivid, Thalia, Triomphe Royale (flamed rose), Optimus, Acapulca, Captain White, George Glenny, Chellaston Beauty, and Polyphemus.

Premier Prizes.—Flamed Bizarre, Pilot, Mr. Parkyn, Derby. Feathered Bizarre, Royal Sovereign, Mr. Godfrey. Flamed Byblömen, Lord Denman, Mr. Godfrey. Feathered Byblömen, Victoria Regina, Mr. Spencer. Flamed Rose, Triomphe Royale, Mr. Turner.

Class Showing.—Flamed Bizarres.—1. Pilot, Mr. Godfrey. 2. Ditto, ditto. 3. Polyphemus, Mr. Lawrence. 4. Everard, Mr. Thornilly. 5. Pilot, ditto. 6. Polyphemus, ditto. Feathered Bizarres.—1. Sovereign, Mr. Godfrey. 2. Platoff, Mr. Lymberry. 3. Sovereign, Mr. Godfrey. 4. Sovereign, Mr. Spencer. 5. Magician, Mr. Houghton. 6. Sovereign, ditto. Flamed Roses.—1. Triomphe Royale, Mr. Godfrey. 2. Ditto, ditto. 3. Triomphe Royale, Mr. Spencer. 4. Triomphe Royale, Mr. Parkyn. 5. Triomphe Royale, Mr. Lymberry. 6. Ditto, ditto. Feathered Roses.—1. Heroine, Mr. Godfrey. 2. Heroine, Mr. Spencer. 3. Heroine, Mr. Godfrey. 4. Ditto, ditto. 5. Heroine, Mr. Houghton. 6. Monument, Mr. Lymberry. Flamed Byblömena.—1. Princess Royal, Mr. Houghton. 2. Queen Charlotte, Mr. Spencer. 3. General Barneveldt, Mr. Thornilly. 4. Sarah Anne, Mr. Creswell. 5. Nepaulesc Prince, Mr. Lymberry. 6. Queen Charlotte, ditto. Feathered Byblömena.—1. Maid of Orleans, Mr. Lymberry. 2. Maid of Orleans, Mr. Godfrey. 3. Maid of Orleans, Mr. Creswell. 4. Black Diamond, T. Adams, Esq. 5. Victoria Regina, Mr. Spencer.

ROSES ON THE MANETTI STOCK.—I have lately seen the most beautiful little rose garden, in the picturesque grounds of J. Morris, Esq., at Sandgate, I ever beheld. Its history is as follows: for twenty years this spot had been appropriated to roses, and the soil, being very light and sandy, became at last so exhausted that roses budded on the dog-rose refused to grow, even with abundance of manure mixed with the soil. As a last effort, the ground was cleared of all the dead and dying roses last November, some manure was applied, and the soil was well stirred. Three hundred young dwarf rose trees, all budded on the Manetti, were then planted. Their luxuriance is now quite remarkable; I never saw such beautiful growth or finer flowers. So vigorous are their young shoots that they will, to a certainty (as they are nearly all hybrid perpetuals), give a succession of flowers till November. This, for a rose garden which has been planted barely nine months, is, I think, a fact worthy recording. It is indeed great encouragement for those, and there are many, who have failed in cultivating roses in light and exhausted soils. It is also most interesting and rare to see such beautiful roses thus flourishing only 200 yards from the sea.—*Rosa.*





Give back the flowers! the maiden there
Hath nought to wreath in her glossy hair;
And childhood sighs for the garland made
From the dew-gemmed bloom of the forest glade;
To breathe of joy on the festal hours,
Give us back in their beauty the summer flowers!"

ILLUSTRATIONS.

POTENTILLA WELLINGTONIA.

POTENTILLA WELLINGTONIA.—This magnificent variety was raised in the nursery establishment of Messrs. E. Henderson and Son, of Wellington-road, St. John's-wood, London. The plant is a *profuse bloomer*, and its extraordinary flowers, being as large, or larger than a crown piece, of a beautiful orange and deep crimson margin, renders it exceedingly ornamental. It merits a place in every flower garden.

POTENTILLA STRATA FORMOSISSIMA MULTIFLORA.—This most beautiful hybrid, we understand, was raised in the nursery establishment of Mr. Van Houtte; its large and *handsomely striped* flowers render it a most distinct and valuable acquisition, worthy a place in every flower garden.

This handsome flowering genus of hardy herbaceous plants has, of late years, had an addition of several most superb seedlings, which have amply repaid for the attention given by the raisers—a dozen very distinct sorts, comprising the following colours, viz., scarlet, yellow, white, rose, black, pink, orange, maroon, buff, and crimson; being either

shaded, spotted, margined, striped, marbled, or self coloured. They may be procured at a cheap price; and being hardy, growing readily in any good lightish loamy soil, readily preserved or increased, and blooming in profusion all the summer season, often up to winter, render them deserving a place in every flower garden.

NOTES ON NEW OR RARE PLANTS.

BOUGAINVILLEA SPECTABILIS.—*The showy flowered.*—A native of South America. The main trunk is quite woody, *tree-like*, having numerous branches. It is a half climber, usually grown in the stove, and succeeds best when trained to a wall. There is a magnificent plant growing in a border, and trained against a back wall in the Jardin des Plantes at Paris, which blooms most admirably every year. Another plant bloomed in the Conservatory at Chatsworth (being the first that bloomed in England), in 1844. Recently a plant, five years old, has blossomed in a vinery (belonging to Mrs. West, near Christchurch in Hampshire), where grapes are ripened without fire, trained in a fan-shaped manner against the back wall, the roots confined in a comparatively small pot. The great beauty of the plant is not in the *petals of the flowers themselves*, which have not any beauty to recommend them; but their charm is in the *large bracteas* or (*floral leaves*), which are borne in vast profusion, the branches being literally loaded with them; producing a most striking effect. In respect to colour, however, they are exceedingly variable, those of the Chatsworth plant being of a *deep purple*; on Mrs. West's, a full bright rose colour; one belonging to M. Choisy has them quite green, which he has named. *B. virescens*; and in others of a *brick-red*; whilst in the new one, called *B. splendens*, they are of a beautiful orange colour. Mr. Tweedie, who had seen trees in blossom in their own country, says, "the trees seem all on fire with them."

In consequence of each of these several plants having flowers so distinct in colour from the others, they have been sent out as *SPECIES* instead of *varieties* (which they certainly are) of *B. spectabilis*. The names given are *B. virescens*; *B. pomucea*; *B. peruviana*; *B. glabra*; *Josepha augusta*; and *Josepha augusta glabra*.

Any, or all, the above merit a place in every stove or warm conservatory. The flowers are produced near the termination of the branches or side shoots, each having *three* large coloured leaves (bracteas, leaves under the corolla), the three forming the appearance of an overblown tulip, whose length of cup is nearly three inches. The real petals, form a very *narrow tube*, one to two inches long, of a yellowish green colour, situated at the centre of the coloured bracteas. (Figured in *Bot. Mag.*, 4810.)

CALYCANTHUS OCCIDENTALIS.—A handsome shrub, from California, discovered by Mr. David Douglas, who sent it in 1831 to the Horti-

cultural Society. It is perfectly hardy, but when trained against a wall it promotes the ripening of the shoots, and in proportion is the profusion of flowers. The wood is equally as fragrant as that of the common allspice (*C. floridus*), but the habit of the shrub is very different. The plant grows erect, stout, smooth. Leaves, oval, heart-shaped, five to six inches long. Flowers scentless, from three to four inches across, each petal about two inches long, and half-an-inch broad, strap-shaped, stamens numerous, forming a yellow eye; the petals are of a bright brick-red colour, very showy. A plant of it, nearly three yards high, with an eastern aspect, blooms freely from August to the end of October. It is a valuable acquisition. (Figure in *Bot. Mag.*, 4808).

MYRTUS BULLATA, *blistered leaved*.—An erect growing shrub, a native of New Zealand. It attains the height of from 15 to 20 feet. The leaves in size and shape are very like those of the common tree-box, with the surface much waved; they are very numerous, and the shrub blooms in profusion, flowers as large as our commonly called double-blossomed myrtle, having four petals, white deeply tinged with rosy red on the outside, and *filled up* with its numerous stamens. In our climate we find it necessary to have it in the greenhouse or pit-frame during winter, but, very likely, would stand uninjured in the open air in the south-west part of England, and in the warmer parts of Ireland. The leaves are particularly wavy above, and purplish beneath, and when bruised, very fragrant and aromatic. It blooms at Kew during the summer months. (Figured in *Bot. Mag.*, 4809).

ESCHSCHOLTZIA TENUIFOLIA, *slender leaved*.—(Synonyme *Chryseis tenuifolia*). It is of a close compact habit, much branched near the base, and crowded with its very narrow leaves. The flowers are yellow, each cup-shaped blossom an inch across. It forms a dense bushy plant, about six inches high, and blooms in profusion. Very neat and handsome, deserving place in every flower garden. (Figured in *Bot. Mag.*, 4812).

WHITLAVIA GRANDIFLORA.—Natural Order Hydrophyllaceæ. A very beautiful *hardy annual*, a native of California, where it was first noticed by Dr. Coulter. It is somewhat of the habit of the *Eutocas*, but much handsomer. It is much branched, and the flowers, bell-shaped, are about half the size of those of the *Canterbury Bell*, of a rich blue colour, borne in terminal racemes, and in profusion. It is a very valuable acquisition for the flower garden, and ought to be in every one, where it will become as universal a favourite as the *Nemophila*, &c. (Figured in *Bot. Mag.*, 4813).

CEANOTHUS LOBBIANUS.—A *hardy*, moderately sized, erect shrub, a native of California. It blooms in profusion, in terminal capitate racemes; the flowers are of a rich deep blue, spangled with golden anthers. It is an elegant plant when in bloom, and exceedingly ornamental during the summer. (Figured in *Bot. Mag.* 4810.)

ACHIMENES PICTURATA.—The flowers are of the form of those of *A. multiflora*, but are of a brilliant colour, rose, marked with darker spots,

similar to the *A. picta*. It is exceedingly handsome. (In Mr. Van Houtte's establishment.)

APHELANDRA PORTEANA.—The leaves are of a beautiful green, ornamented with silvery-white metallic-like nerves. The flowers are of a beautiful orange colour. (In Mr. Van. Houtte's establishment.)

ISOLOMA DECAISNEANA.—A most abundant bloomer, and the flowers are of a bright vermilion, with zebra-like stripes of yellow, very beautiful, deserving a place in every stove.

LAVIANDRA HOIBRENKII.—The leaves are large, tinged over with a beautiful red; the flowers are exceedingly handsome, of a rich blue colour. A fine stove plant.

GLOXINIA AGAR.—An extra grand white, with a rich amaranth throat, and very superb.

G. DON PEDRO.—The limb has a large and beautiful rose border, which is well defined; at the inside of it is a very distinct ring of bright carmine, and, next to it, a second ring of a deeper colour. The inside of the tube portion of the flower is white. Very fine flower.

G. DR. REICHENBACH.—An extra large and handsome flower, a rich and beautiful blue, with a large primrose-yellow throat.

G. ERECTA-LINEATA (in the form of *Fyfiána*).—The face of the flower flat, and very regular at the edges. The outside of the blossom white, streaked with rose; and inside a white, with a regular line of fine rose. A very handsome variety.

G. ERECTA-MARMOREA.—A large neat flower, white, with the face quite even, and beautifully striped with rose, the outside ground is white. Very handsome.

G. HECLA.—An enormous flower, blue, with a black and white throat, very fine.

G. L'ÆTNA.—A bright cherry colour outside, and the inside white; very handsome.

G. MADAME LEGRELLE D'HANIS.—The flower is very round in front, rose on a white ground, with six blotches of carmine at the entrance of the throat. Very neat and handsome.

G. NOVELTY.—Flower white, with a broad rim of rich blue at the mouth.

G. M. BORSIG.—Flower an immense size, rose, with the throat shaded with amaranth. Very fine.

G. PRINCESS MARIA.—A very large white flower, with all the inside a fine blue. Very pretty.

BIGNONIA MARMORATA.—A beautiful greenhouse climber; the fine green leaves are handsomely marbled with white. It blooms freely too, trained to a wire frame, or against a trellis, pillar, &c.

CAMELLEA SALICIFOLIA, *willow leaved*.—The leaves are long and narrow, and the young ones are *deeply tinged* with red. It is very handsome, even if without a flower.

CANNA LILIFLORA ALBA, *lily-like flowered*.—The flowers are large, *pure white*, and partake of the form of the common white lily of our gardens. It is a fine plant, flourishing in the greenhouse.

AZALEA RINZII. An hybrid raised between an *Indian Azalea* and the old hardy yellow-flowered *Azalea pontica*. Its flowers are of a brick-red colour.

POTENTILLA AURANTIACA SUPERBA.—The flowers are large, of a rich orange colour. It is very handsome.

CULTURE OF TRITOMA UVARIA.

BY MR. C. WINCHESTER, OF OSBORNE, ISLE OF WIGHT.

The love of flowers is a sentiment common alike to the great and to the little; to the old and to the young; to the learned and the ignorant; the illustrious and the obscure. While the simplest child may take delight in them, they may also prove a recreation to the most profound philosopher. There is not a plant but, upon minute investigation, will reveal some peculiar beauty or some exquisite adaptations to reward the attention bestowed. "Behold the LILIES of the field, how they grow; they toil not, neither do they spin; and yet I say unto you, that Solomon, in all his glory, was not arrayed like one of these." How surely would Solomon have agreed with this beautiful speech; for that his "wise heart" loved the flowers—the LILY especially—is evident from numerous passages in his Songs. The object of his love, in claiming a supreme dignity of beauty, exclaims, "I am the Rose of Sharon, and the Lily of the Valley."

The plant which is the subject of this communication—viz., *Tritoma Uvaria*, belongs to the natural order LILIACEÆ, and ranks amongst the most gay and interesting of our flower-garden ornaments. It is an evergreen herbaceous plant; and though introduced from the Cape of Good Hope so far back as the year 1707, is yet comparatively little cultivated in our own country. In the course of my peregrinations, I have rarely ever met with it; and where, in one or two instances, I had the good fortune to see it, I found it in anything but a flourishing or perfect condition. When so found, however, it forms an object of surpassing beauty. About four years ago, I received a small plant of it from the Royal Gardens at Kew, which, after growing some time in a pot, was turned out, in the spring of 1851, into an open border having a north-east aspect, but sheltered from the south-west winds, which are very prevalent and destructive here, by a terrace wall. Here it appeared to be at home, for it grew vigorously; and, in the autumn of the following year, it rewarded me with a few heads of bloom, giving an earnest of what was in store for me when the plant itself should be more fully developed. This year, my brightest hopes, with respect to this plant, have been realised. At the present time, it is the most conspicuous object among the many plants by which it is surrounded. Its flower-stalks, which number twenty-four, are thrown well above its flag-like and graceful foliage, some of them rising to the height of *five feet*, and sufficiently strong to bear, unsupported, the magnificent display of blossoms

which cluster round their summits for a *considerable* length. It is a plant which, whether viewed from a distance or in close proximity, cannot fail to captivate, while it must be regarded as one of the brightest gems ever introduced from that rich world of floral loveliness, the *Cape*. Those whose object in flower-gardening is to combine beauty with effect, cannot do better than grow this plant extensively, for it will be sure to reward them for any labour or skill bestowed on its cultivation. It appears to delight in a deep, rich, loamy soil; and, as a proof of its capability to resist frost, I may mention that it withstood the *severity of last winter uninjured*. It merits a place in every flower-garden, and will prove one of its most striking ornaments to the end of the season.

REMARKS ON THE HEALTHINESS OF THE ROOTS OF PLANTS BEING ESSENTIAL TO THEIR SUCCESSFUL GROWTH.

BY A PRACTICAL GARDENER.

As the roots of plants are *the chief medium* through which they receive nourishment, some account of their structure, and of the curious and simple mode by which they effect their object, will, I hope, prove of some utility to the readers hereof.

The root may be defined to be that portion of a plant which grows in an opposite direction to the stem; and differing from the latter in its remarkable downward tendency, and from its disposition to shun the light of day. So powerful, indeed, is this tendency to descend, "that no known force is sufficient to overcome it." The chief object of the root appears to be that of fixing the plant firmly in the earth, and of taking up a supply of moisture from the humid medium by which it is surrounded. It usually consists of several ramifications, from the sides and extremities of which, without any apparent order or regularity, proceed an indefinite number of delicate fibrils with spongy points. Now these fibrils are the only true roots, and to their soft extremities (spongelets) is consigned the whole office of absorbing fluid; the more woody portions of the root merely serving as canals, to convey the fluid thus obtained to the upper parts of the plant. The roots generally pierce the soil in a downward or horizontal direction, according to the individual habit, but more especially in that course which offers the least resistance, and yields the greatest quantity of soluble food. Hence the propriety of *mulching* is by some gardeners called into question, because the richness of the mulching material, and the warmth produced by its fermentation, has a tendency to attract to the surface the young fibrils. And then, upon the removal of the manure employed in the operation, their extremely succulent and tender tips become exposed to the influence of draught, &c., than which nothing can be more injurious, as it quickly destroys their absorbing power, and thus deprives the

plant of its chief source of nourishment. It has been said that the fibrils are the only true roots, and that the feeding function is chiefly consigned to the lax tissue of their extreme points. That this is really the case, there can be no reasonable cause to doubt, or why should the success of planting depend so materially upon their preservation? it being a well-known fact, that subjects of any size, such as fruit trees, are invariably less prolific the first season after transplantation, than on the previous and ensuing years. Why these little spongelets should possess the power of absorbing moisture with great force, and of transmitting it to every part of the plant, is a curious question, and has given rise to many ingenious conjectures. But it has at length been satisfactorily answered by that clever French author, M. Dutrochet, If a small glass tube, having its end covered with a piece of bladder, be partially filled with gum-water, and then plunged into simple water, sufficient to wet the outside of the bladder, the latter will be permeated by the water, and the volume within the tube will continue to increase, so long as the density of the fluids on each side of the intervening membrane remains unequal. "But there is also a contrary current to less amount,—the interior fluid passing out to mix with the surrounding water." The first and more powerful of these currents is called endosmose (flow inwards), and the second and less powerful, exosmose (flow outwards). The cause of their motion was by Dutrochet referred to galvanism; but it is now more generally believed to arise from "the attraction exerted between the particles of the different fluids employed, as they meet in the porous membrane."—(Dr. Reid.)

"Now the conditions requisite for this action are two fluids of different densities, separated by a septum or partition of a porous character. This we find in the roots. The fluid in their interior is rendered denser than the water around by an admixture of the descending sap; and the spongeole (or spongelet) supplies the place of a partition. Thus then, as long as this difference of density is maintained, the absorption of fluid may continue. But if the rise of the sap is due to the action of endosmose, there ought also to be an exosmose. This is found to take place; for if a plant is grown with its roots in water, the fluid surrounding them is soon found to contain some of the peculiar substances they form, and which are contained in the descending sap: thus a pea or bean would disengage a gummy matter; a poppy would communicate to the water an opiate impregnation, and a spurge would give it an acrid taste.

"Thus we see how beautifully and how simply this action, extraordinary as it seems, is accounted for, when its whole history is known, on principles which operate in other departments of nature."—(Dr. Carpenter.)

From this it must appear obvious to every one that, to keep plants in a healthy state, the conditions of endosmose and exosmose must be carefully maintained. Thus in the case of bulbs maturing and at rest, and of plants cut down in the autumn, such as *Pelargoniums* and *Fuchsias*, the actions of the leaves being destroyed, the fluid, rising by

the force of endosmose, must gradually subside, and the plants languish into a state of semi-vitality, till such time as genial warmth shall expand the fluid within their latent buds, and cause them to open and put forth new leaves. This is the reason why the application of water to plants thus circumstanced should be carefully avoided, excepting, indeed, a few special subjects, whose succulency is not sufficient to keep them from being shrivelled up.

THE BEAUTY OF DOUBLE SWEET WILLIAMS.

BY A COUNTRY CLERGYMAN.

For the last five years, I have been collecting and growing all the varieties of *double-flowered Sweet Williams* I could obtain. I now have upwards of fifty very dissimilar and beautiful varieties, varying in gradation from a white ground spotted with red, crimson, and purple, through the various shades of pink, rose, lilac, purple, scarlet, and crimson. I need not attempt to eulogize the flowers of this beautiful and lovely tribe; all admire Sweet Williams, and especially the double kinds. By proper attention in culture, I have my flowers not only very double, but three-quarters of an inch across; and these produced in fine corymbose heads, give a fine effect, especially so when the fine colours are so distinctively arranged as to have the best contrast. They are beautiful, whether grown in masses or singly, and well merit a situation in every flower-garden.

Two years ago I had about twenty varieties; and, procuring from Germany a packet of seed, saved from the best varieties grown by a celebrated florist, who had paid much attention to these flowers, I have been so successful as to increase my stock of real double-flowered to fifty-seven very distinct kinds.

I grow mine in a good, moderately rich, loamy soil, upon a dry subsoil. I increase them by taking off slips in July; these soon strike root in pots placed under a hand-glass, or in a frame, inserting them in a moist, yellow sand: they would most likely root as well in sandy loam or sandy peat. I pot them singly towards the end of September, and keep them in a dry cool frame during winter, turning them out entire at the end of March.

I can strongly recommend these lovely flowers to the notice of all persons who desire to have beautiful dwarf flowers for ornamenting the flower-garden. Some of my varieties I procured at nursery gardens, and others I met with in the gardens of various friends, to which I have added eight splendid seedlings of my own raising.

CULTURE OF POINSETTIA PULCHERRIMA.

BY AN EXTENSIVE GROWER FOR SUPPLYING COVENT GARDEN, BALLS, &c.

THIS noble flowering plant is fully deserving the most earnest attention and careful management, in order that it may be so grown as to pre-

duce its flowers as perfect in our stoves as those grown at Philadelphia, where, it is stated, the beautiful scarlet whorls of bractæ which terminate the branches measure as much as twenty inches across, and are equal in colour to the finest tints of the richest China Rose.

It is decidedly *a splendid feature* among our ornamental winter blooming plants, and, from its habit, I am confident it may be cultivated with the application of the common treatment given to stove plants. It must be kept in rather a *close moist atmosphere* in the stove, along with other tender plants, all of which are now and then syringed over, and underneath too, when the weather is fine, in order to prevent the attacks of the red spider or other insects, and the accumulation of filth. In the day, if fine, a free circulation of air is kept up; and at night the temperature of the house averages from 65 to 70 degrees. The soil used, and which seems to suit well, is very sandy loam; in potting, care is taken to ensure a good drainage, and as soon as the roots reach the inside surface of the pot, an additional shift is *immediately* given, so that the growth is never checked, and the plant in consequence is kept continually progressing. It requires a great supply of water at the roots. Plants procured in spring will furnish noble specimens for the following autumn and winter's bloom; and a plant now cut down will supply cuttings which are easily struck in heat, and a stock of young plants for later bloom will be obtained. The large heads of rich crimson flowers are now in much request in London, and are fine ornaments in the dining and drawing-rooms, &c. Also the smaller sized specimens are taken to the assemblies by visitors. To prevent the plants becoming naked about Midsummer, stop the leads, and it induces the production of side shoots. After blooming, give the plants, if to be retained, a few weeks' rest, then re-pot as done with the newly-struck plants. I never keep a plant longer than blooming twice, but I prefer the plants of *first year's* bloom. I strike cuttings every spring.

ON PROPAGATING ROSES FROM CUTTINGS OF THE ROOTS.

BY AN ARDENT ROSE CULTIVATOR, OF CHESHUNT, HERTS.

HAVING been advised to try the experiment of raising rose trees by taking cuttings of the roots, I did so, and found it to succeed admirably. The mode I adopted was as follows:—The first week in March I took some of the long, thick and fleshy-looking roots of my English and French roses, and cut them into pieces about three inches long. I then smoothened the surface of a border in front of a peach wall; upon this I laid the roots flat, at about six inches apart; when the roots were placed, I covered them with fine sifted soil, half an inch deep, gently beating it to the cuttings; I then laid four inches more of loamy soil well enriched with rotten cow-dung, a year old, giving the whole a good watering, and, when dry, smoothened the surface over with the

back of the spade. By the middle of May every cutting had sent one, and some two strong shoots; and, on examination, I found the soil I had covered the cuttings with to be filled with a mass of fine roots. At this time, September 5th, the shoots are eighteen inches high.

I have anxiously watered the bed; being in a sunny situation I found it got dry, more especially so, having the bed raised upon the old surface of the border. It would have been better to have sunk it so as finally to have it even with the surrounding soil.

I have practised the above mode of raising Moss Roses, and similar border kinds, which have been found difficult to increase from cuttings of the wood or young shoots, and have never known it fail. The following November is the best time to take up the young plants, and remove them to beds for flowering, which they will do very freely if taken up with as many fibrous roots as possible, and cut the main shoot back to about eight inches, which will push vigorous new shoots, that will furnish both flowers, and form the basis of a *bushy* plant for future years. *Well-rotted cow-dung* is the best manure for the Rose, being cooler than horse-dung, &c.; a liberal portion of it must be mixed in the soil at planting, also laid over the roots of the plants early in March, and either just pointed in or covered over with a little fresh loam, it greatly improves the vigour of the plants and increases their bloom.

SUCCESSFUL TREATMENT OF THE SWEET-SCENTED CYCLAMEN PERSICUM.

BY A LONDON AMATEUR FLORIST.

I do not remember ever to have met with (but perhaps you may attribute this to a very limited research) any specific directions for the treatment of that beautiful plant, the *Cyclamen Persicum*.

Being an ardent admirer of this plant, not only on account of its general elegance of growth, but from its producing its flowers at a very early season, which thrive and retain their luxuriance even in the atmosphere of a room, I have turned my attention to its particular management for a few years past, and have been far more successful than I have seen elsewhere, in or around London.

The plan of treatment pursued, I have much pleasure in now communicating.

The *Cyclamen Persicum* begins to show its flowers early in the year, and may be said to be in beauty throughout the months of February, March and April, or the two latter, and May. As soon as the flowers fade and droop, the pots containing the plants are placed on their sides (as a precaution against their being watered), in a corner of the greenhouse. In August, the roots are taken out of the pots, and the earth adhering to them being first carefully shaken off, they are planted in an open but sheltered border of the garden, where they are allowed to

remain until the cold forebodes frost; they are then taken up, the fibres being carefully preserved, and are put into pots proportioned to the size of each root; the crown of the plant is well covered with earth, and the compost used consists of two parts leaf-mould, one ditto sandy-peat, one ditto ashes of burnt vegetables, and a small portion of thoroughly-rotted dung. The plants thus potted are then arranged in a *cold frame* and *plunged to the rim* in coal ashes. In mild weather, the glass is taken off; but by night, protection from frost, and by day from cold and rough winds, is indispensable. On the flowers appearing, the plants are removed to the greenhouse, and are placed as near the windows as possible, to have the advantage both of sun and air; they are abundantly watered with soft water, of the same temperature as the atmosphere they are growing in, and the leaves also are occasionally well sprinkled; but this operation is gone through in the morning, and the windows of the house are immediately opened, otherwise the leaves would damp off, and the root decay. The pots are well drained with smallish pieces of brick.

In recommending this treatment with the *Cyclamen Persicum*, I can speak with confidence, having, among other good specimens, one plant last spring that produced *eighty-seven* flowers.

Dividing the roots to increase the stock of plants is bad; the roots are a long time recovering the wound thus given, and do not afterwards flower so strong. Young plants are obtained very easily from seed, or can be purchased at a trifling price.

HOW TO DESTROY THE GREEN FLY ON BEDDING PLANTS.

BY MR. W. CUMITT.

I NOTICED your excellent remarks on this subject in last month's *Floricultural Cabinet*, and observing the following particulars on the same in a subsequent *Gardeners' Chronicle*, I forward them for your November Number:—During a visit to a friend in Devonshire, about a month ago, I was much struck with the appearance of his parterres, then gay with various bedded plants in the best possible condition; all I had theretofore seen and since inspected were in a very different state, the complaint of green fly being general this season, even in grounds where pains and expense are not spared. On inquiring how this was effected, my friend informed me that he was visited like his neighbours with aphides, but that, so far as regarded low-growing plants, the remedy was speedy, certain, and simple; his plan being as follows:—He has four slight wooden boxes without bottoms, about twenty inches deep, made to fit just within the edging of the divisions of his parterre, all the divisions being precisely of the same size and patterns, so as to admit of a box fitting either one. He places a box upon each, presses down the edge, and through a hole in the end introduces the spout of

his fumigator, and having filled one box with smoke, plugs up the hole and proceeds to another. He uses dried stuff (?) with mixture of tobacco, and fills four boxes with each charge of his fumigator. The smoke being injected cool, he is able to remove the box after four or five hours, taking care to admit the air gradually; and he contrives to smoke three times, or twelve divisions in the twenty-four hours, without causing the bloom to drop, as it would do—and does, in fact—when he uses tobacco paper, or ignites within. I saw one operation performed on the four boxes in about as many minutes, and nothing could be more effective. Now, it has occurred to me since witnessing this that we have the solution of a problem which has puzzled me and others, and that I shall be doing my fellow florists a service by making it known. Hitherto it has been easy enough to fumigate houses and frames, either with the fumigator or by burning tobacco paper and other combustibles in them; and even standard roses I have seen fumigated by covering them with an oil-skin bag distended on a parasol; and, moreover, shrubs and plants of tall growth are often dusted with snuff, or covered with tobacco-water or other solution—all, however, tedious and uncertain operations; but to clean plants, such as Verbenas, &c., pegged to the ground, has hitherto been considered an impossibility. And why should not this plan be applied to borders of any length? It would only be necessary to mark them out in equal divisions, keeping about three inches of space unplanted between each division, and so covering them with boxes made to fit these divisions. Again, market gardeners might avail themselves of the process to fumigate strawberries; and by providing a lot of old casks, with one end knocked out, and past use for other purposes, to be procured very cheap at cooperages, and pitched over; or they could cover their shrub fruit, such as gooseberries, currants, and raspberries, and bring it to market in such a clean state as would give it a preference, while they insured the crop, now often injured and sometimes totally destroyed by aphids and other vermin. I would suggest that, when the divisions of flower parterres are cut in fanciful shapes the covers might be made of tin, fitted to the parterre, and riveted upon an iron frame round the bottom; these being painted occasionally would last for many years.—*M. C.*

CULTURE OF THE SHOW CLASS PELARGONIUMS.

BY A LONDON EXHIBITOR.

I HERE forward a few remarks on the culture of Pelargoniums, which, if followed out, cannot fail of the most complete success. The plan is this. The latter part of May is the best time to strike the cuttings. One great reason that there are so many disappointments in obtaining a fine bloom is owing to the cuttings being struck late in the season, so that there is no time for hardening the plants before winter arrives. The consequence is, the plants are weak and sickly till late in the

following season, and the blooms are few and small. Suppose the cuttings to have been struck at the time I recommend—about the latter part of June—they will require potting off: after this they may be kept in a cool frame for about a fortnight, and then gradually exposed to the full air; they should then be placed on a dry bottom, so that the roots may be prevented from running down into the ground. They should be placed, too, so that they may be screened from the violent heat of the sun for about three or four hours in the middle of the day. They may remain in this situation till the beginning of September, when they must be repotted. This must be carefully attended to. Then place them in a cool frame; they must have the full air all day, and place triggers under the sashes at night. The sashes overhead will prevent slight frosts from injuring them. At this potting most of them will have made very strong shoots; they, therefore, must be shortened to about three eyes; this will induce them to throw out several very strong shoots, about two inches long, by the latter part of October. They may remain in this situation, with proper protection, till the beginning of March, giving but very little water. When they begin to grow, examine them to see if any of them want potting; the strong growing kinds should not be in less than six or seven inch diameter pots. If it be desired to bloom them early, give them a slight lining; but if a little patience be exercised, and not give them much artificial heat, they will amply repay, by a more vigorous and splendid bloom.

If these few remarks on one of our most admired class of plants are carefully attended to in practice, the most desired success will follow. Old plants will not do, neither will younger.

BOTANICAL SUPERSTITIONS AND DELUSIONS.

BY J. B. DONOVAN, ESQ.

THERE is, perhaps, no branch of natural history that has been more fruitful in superstitious fears and observances, or that has longer been an object of attention to the inquiring eye of philosophy, than botany; and in times of ignorance this science harvested a full crop of absurdities. Much good as well as much evil has been attributed, in all ages, and by all nations, to the supernatural agency supposed to reside in certain roots and plants. As the Arabians, living in the desert, from the uninterrupted view of the heavens, became great proficients in astronomy, and, by the eternal and unvarying celestial compass traversed the pathless sands, so, in like manner, shepherds, the earliest inhabitants of most countries, employed the leisure of a pastoral life in studying the natures and properties of plants, and doubtless often amused themselves in filling up the outline of their botanical systems with the help of imagination.

Thus the doctrine of signatures was invented without any sufficient

reason, but that it pleased them to imagine that a fancied resemblance in the shape of the root, leaf or fruit of any plant to any particular part of the human body, must indicate its possessing some beneficial or hurtful power over such corresponding part. For example, a decoction of maidenhair was thought good to wash the head, and to make the hair grow; a similar preparation of quinces, which are a downy, hairy fruit, was also accounted good for reproducing hair that had fallen off. Macassar oil and bears' grease now usurp their place among modern beaux, with, perhaps, as much claim to efficacy.

Balm and wood-sorrel, representing the heart in figure, were, as a natural consequence, cardial; but the walnut was a most perfect type, bearing the signature of the whole head, the outward green cortex answering to the pericranium, the harder shell within representing the skull, and the kernel in its figure like to the lobes of the brain, and, therefore, clearly good for mental diseases. "Thus," says Mr. Heydon, in his *Rosicrucian Physics*, "did Divine Providence, by natural hieroglyphics, read lectures to the rude wit of vulgar man, and the disciples of theseraphically illuminated fraternity of Rosicrucian Christians, being sufficiently illuminated from these, found out the rest."

The shamrock, or trefoil, which was used by the Druids to cure diseases, and is the national badge of the Irish, acquired the latter distinction by its having been made an emblem of the Trinity by St. Patrick. When the Pagan Irish were unable to understand the doctrine of three Gods in one, he plucked a trefoil, and asked them, "Is it not as possible for the Father, Son, and Holy Ghost to grow upon one stalk as it is for these leaves to do so?" The argument was deemed conclusive by his hearers.

Each plant or root required a different method; if not religiously adhered to, both in hour and season, its virtue would be sure to fail at the greatest need.

The Druids held the oak in extreme veneration, and most particularly the mistletoe, which was to be cut with a golden knife, to be gathered when the moon was six days old, the priest clothed in white; the portion cut off was to be received on a white napkin, and, lastly, two white bulls were to be sacrificed; and thus solemnly consecrated, the mistletoe was an antidote to poison, and prevented sterility.

Fern-seed was thought to have the power of conferring invisibility; in allusion to which power one asks in an old play, "Had you Gyges' ring, or the herb that gives invisibility?" and in Ben Jonson's "New Inn":—

"————— I had
No medicine, sir, to get invisible;
No fern-seed in my pocket."

The ancients, who often paid more attention to preconceived opinions than to the evidence of their senses, believed that the fern bore no seed. Our ancestors gained one step, and believed it bore seed, which was invisible; hence, from an extraordinary mode of reasoning, founded on

the aforesaid doctrine of signatures, it was thought that they who possessed the secret of wearing this seed about them would become invisible. Fern-seed was said to possess great magical powers, but it must be gathered on Midsummer's Eve. One who went to gather it reported that the spirits whisked by his ears, and sometimes struck his hat and different parts of his body ; and at length, thinking he had got a sufficient quantity of it, he secured it in papers and a box, but when he came home he found all empty.

At the period when the belief in witchcraft was a matter of faith, there was scarcely any plant but had some share in its mysteries, especially where its habitat at all corresponded with the baneful effects attributed to it. Thus the *circœa*, or enchanter's nightshade, which was celebrated for the purpose of raising the devil, grew among the mouldering bones and decayed coffins in ruinous vaults.

But beyond all in power was the mandrake. This root was fabled to grow under a gallows, or place of execution, and arose from the fatty matter dropping from the body of the dead, which gave it the shape of a man : a fable somewhat similar to that of the serpent's teeth sowed by Cadmus. It is affirmed, by old authors, that mandrakes do make a noise, or give a great shriek, upon being pulled out of the earth.

" Where the sad mandrake grows,
Whose groans are deathful."

Thus there was great hazard of life to them that pulled up this root. Pliny says, "When they intended to take up the root of this plant, they took the wind thereof, and with a sword describing three circles about it, they digged it up, looking towards the west." Another more cautious authority directs, that he who would take it up, in common prudence should tie a dog to it to accomplish his purpose, as if he did it himself he would shortly die. What prompted these strange conceptions might be the tradition that this root was of great use to Circe, who, by the magic of simples, wrought so many wonders.

The mention made of mandrakes in the thirtieth chapter of Genesis has proved the source of much discussion ; though it is quite evident that some other species of plant was spoken of, as being a thing much prized. St. Augustin, who has commented on this passage, says, "It was a great curiosity to behold, as it was very beautiful to the eye ;" but wondered why Rachel should set so high a value upon it, unless for its scarceness.

Pliny says, that Pythagoras composed a book on the magical virtues of plants, and first called the mandrake, anthropomorphous, or man-shaped ; this gave rise to the common practice of imposing on the ignorant by cutting the roots of briony into such a form. "There are many," says Mr. Martyn, "in several parts of Europe, who carry about and sell roots to ignorant people, which handsomely make out the shape of a man or woman ; but these are not the production of nature, but contrivances of art, as divers have noted, and Matthiolius plainly detected and exposed. He learned this way of trickery from a

vagabond cheater under his care; his words are, "That is vain and fabulous, which ignorant people and simple women believe; for the roots which are carried about by impostors, to deceive unfruitful women, are made of the roots of briony and other plants; for in these, yet fresh and virent, they carve out the figures of men and women, first sticking therein the grains of barley or millett, where they intend the hair should grow; then bury them in sand until the grains shoot forth their roots, which at the longest will happen in twenty days; afterwards they clip and trim those tender strings in the fashion of beard and other hairy teguments." Though much out of repute, even in Martyn's time, he says, "I have had them very gravely offered me for sale."

Another virtue of this root was the power of procuring sleep. Cleopatra thus asks for it,—

"Give me to drink mandragora.

CHARMIAN—Why, madam?

CLEOPATRA—That I may sleep out this great gap of time my Antony is away."

And Iago, having basely deceived Othello, with a malignant joy, adds,—

"Not poppy nor mandragora,
Nor all the drowsy syrups of the world,
Shall ever medicine thee to that sweet sleep
Which thou ow'dst yesterday."

The plant which, in its natural form, more faithfully represents an animal, is the Scythian or Tartarian Lamb, or Barometz, in the language of the country; and, as it grows, it might, at a short distance, be taken for an animal rather than a vegetable production. It is one of the genus *Polypodium*; root decumbent, thick clothed, with a very soft close wool, of a deep yellow colour, stripes from one foot and a half in length appearing above the ground. It is well known to be a root which, from the variety of its shape, is easily made to take the form of a lamb, which the Tartars call Barometz. In China, it is known by the name of Rufous Dog. Towards one end of the root, it frequently becomes narrower and thicker, so as to give the resemblance of head and neck, and has sometimes two pendulous hanging excrescences, resembling ears; at the other end is a short root, resembling a tail.

Mr. Bell, in his "Journey to Ispahan," thus describes a specimen he saw:—"It seemed to be made by art to imitate a lamb. It is said to eat up and devour all the grass and weeds within its reach. Though it may be thought that an opinion so very absurd could never find credit with people of the meanest understanding, yet I have conversed with some who were much inclined to believe it; so very prevalent is the prodigious and absurd with some part of mankind. Among the more sensible and experienced Tartars, I found they laughed at it as a ridiculous fable." Loureiro affirms that the fresh root, when cut, yields a tenacious gum, like the blood of animals, and is used as a styptic to stop the bleeding of wounds.

Dr. Darwin, in his "Loves of the Plants," with poetic licence, adopting the fable, says:—

"E'en round the pole the flames of love aspire,
And icy bosoms feel the sacred fire;
Cradled in snow, and fanned by arctic air,
Shines gentle Baromes, thy golden hair;
Rooted in earth, each cloven hoof descends,
And round and round her flexile neck she bends;
Crops the grey coral moss, and hoary thyme,
Or laps with rosy tongue the melting rime;
Eyes with mute tenderness her distant dam,
Or seems to bleat a Vegetable Lamb."

(To be continued.)

MISCELLANEOUS.

REMARKS ON THE PANSY.—PLANTING IN SPRING.—For this choose a dry day towards the end of March, mark off the intended rows at one foot apart, and when planting, leave a space of at least ten inches between each plant. After planting, it would be advisable to turn a garden-pot over each plant for the first day or two, to shade it from the sun, wind, or frost. If there has been frost during the night, be very careful not to uncover them if the sun be at all likely to shine. Pansies love a moist still atmosphere, and are very impatient of wind; all sudden changes are also very prejudicial. Several of your readers will have remarked that if a hot sun succeed rainy weather, many of the plants begin to droop, and would soon die off if not shaded. The same effect is also produced when a bed previously shaded is suddenly exposed to the heat of the midday sun. If you find any plant thus affected, place a hand-glass over it, and form it into cuttings. But after all due care and attention have been bestowed, it will frequently be found that some of the plants fog off. This has been attributed to the wire-worm; but I have never found that pest at or in the roots of any Pansy I have taken up, which I invariably do when any of the plants fall prostrate. Strength or freshness of the manure, and its being too retentive of moisture, have been assigned as other causes. That this disease has been accelerated by them I have no doubt; but it cannot be the only reason, as they very frequently fog off in poor sandy soils. Perhaps some of your readers can suggest the true cause. Any person who may wish to send flowers for exhibition will be quite unable to compete successfully, unless he covers his beds at least a week previously to each show, to protect the plants from being battered by the wind or rain, or faded by the sun. In hot weather it will prevent excessive evaporation, and in cold keep the temperature more uniform. The

frames for the cover should be at least three or four feet above the bed in the centre, and supported at the four corners on posts, at about eight inches from the surface, to allow the free circulation of air; it may be made similar to a Tulip frame. One of the greatest enemies the Pansy grower has to contend with is the slug; during one night it will make as great ravages among the blossoms as will require a week to replace. The best method to rid yourself of these intruders is to water the bed with clear lime water during the evening, after a shower of rain (when they come out in great abundance); but any person wishing to show must carefully search for them both morning and evening. They generally secret themselves under the leaves or close to the roots of the plants. In order to guard as much as possible against the depredations of slugs, &c., let your beds be edged with slate or stone, which affords no harbour for them, and always looks neat. Never water your beds, even in the driest season; but in its stead, if continued hot weather is expected, I would advise that fresh cow manure be placed round the base of each plant, which, by preventing too rapid evaporation, will be amply sufficient to preserve a due amount of moisture.—*An Exhibitor in London.*

CULTURE OF CINERARIAS.—Compost, two parts of turfy-loam which has been obtained a few months from the pasture, and laid in a heap; this to be broken up by the spade or hand to a rough condition, to which add the other part in equal portions of leaf-mould and well-decomposed cow-dung, got from the field, and the whole have a liberal sprinkling of the usual silvery-white sand. A liberal drainage must also be given; water freely in the period of rapid growth, giving manure-water once a week, and repeat as often as the state of the roots indicate its necessity. Fumigate with tobacco-smoke often, placing the plants in a box, and thus save from the ravages of green-fly. Sow the seed as soon as ripe in a shady border, or in pots placed in the shade; prick off the plants into pots or pans, and put them in a cool frame, which must be closed for a few days and be shaded; as soon as begun rooting give air, and shortly take off the lights. When plants are strong enough, pot them singly. If large spreading plants are desired, stop the leading stem at from four to six inches high, and it will cause the production of side shoots. Keep the plants cool in winter, just from frost, and be careful not to damp them off. Pot into the blooming-pots in January for the general spring bloom, and earlier or later for a bloom accordingly. When the plants have done blooming, and seed collected, cut off the tops, not too close, or the crown will rot, and the plant die. Turn them entire into a shady border, and pot off suckers when large enough.—A LONDON EXHIBITOR NOT YET BEATEN.

FREE BLOOMING GREENHOUSE PLANTS SOMEWHAT HARDY.—*Killaloeensis* would find any of the following answer his purpose:—*Abutilon venosum striatum*; *Acacia grandis*; *Acacia lineata*; *Acacia pulchella*;

Aphelaxis macrantha purpurea; *Begonia Prestonensis*; *Begonia Martiana*; *Boronea pinnata*; *Bouvadia flava*; *Brachysema latifolia*; *Cantua dependens*; Carnations—tree—various; *Coronilla glauca*; *Correa speciosa grandiflora*; *Correa Brilliant*; *Correa picta superba*; *Crocea saligna*; *Crocea stricta*; *Daphne fortunei*; *Daphne japonica*; *Daviesia speciosa*; *Diosma uniflora*; *Diosma speciosa*; *Epacris campanulata alba*; *Epacris hyacinthiflora*; *Epacris hyacinthiflora candidissima*; *Epacris grandiflora superba*; *Epacris impressa alba*; *Epacris impressa coccinea*; *Epacris splendida*; *Erythrina Crista-galli*; *Eutaxea myrtifolia*; *Eutaxea floribunda*; *Gardoa Hookerii*; *Hovea Celsii*; *Hydrangea japonica variegata*; *Kalosanthus (crassula) coccinea superba*; *Lantana crocea superba*; *Lantana purpurea*; *Leschenaultia formosa*; *Linum tigrinum*; *Mirbelia floribunda*; *Mitraria coccinea*; *Nerium grandiflorum*; *Nerium splendidum*; *Nerium luteum plenum*; *Oxalis elegans*; *Passiflora cœrulea grandiflora*; *Passiflora Bellotti*; *Pimelia Hendersonii*; *Pimelia decussata*; *Polygala grandiflora*; *Primula sinensis pleno—alba*; *Primula sinensis pleno—rubra*; *Salvia gesneriflora*; *Sollya heterophylla*; *Swainsonia galegifolia rosea*; *Swainsonia galegifolia—alba*; *Swainsonia Osbornii*; *Tasconia manicata*; *Tasconia molliissima*; *Tecoma jasminoides*; *Tropeolum tricolor grandiflorum*; *Tropeolum Triomphe de Gand*; *Tropeolum Lobbianum*; *Veronica Andersonii*; *Zichya inophylla floribunda*; *Erica Cavendishii*; *Erica ventricosa coccinea*; *Erica cerinthoides superba*; *Erica Linneœoides superba*; *Erica tricolor elegans*; *Erica grandinosa autumnalis*; *Azalea indica*, various; *Camellias*, ditto; *Geranium (scarlet class)*, ditto; *Pelargonium*, ditto; *Fuchias*, ditto. Ferns, in great variety. Any of the *Gloxinias*, except *maculata*, will succeed.

CITRONS AND ORANGES.—A long chapter is devoted by Professor Targioni to the *Agrumi*, that is, to the Oranges, Lemons, Citrons, and others belonging to the genus *Citrus* of the family of *Aurantiacæ*. They have long been objects of great interest to the Italians, and the subject of many valuable works, being extensively cultivated for profit wherever the climate will admit of it, and for ornament or curiosity in public or private gardens in the more northern parts of the Peninsula, where they still require protection in winter. They are all of Eastern origin, and mostly introduced into Europe in comparatively modern days, but of very ancient and general cultivation in Asia. The varieties known are very numerous and difficult to reduce accurately to their species, on the limits of which botanists are much divided in opinion. Those who have bestowed the most pains in the investigation of Indian botany, and in whose judgment we should place the most confidence, have come to the conclusion that the Citron, the Orange, the Lemon, the Lime, and their numerous varieties now in circulation, are all derived from one botanical species, *Citrus medica*, indigenous to, and still found wild in, the mountains of East India. Others, it is true, tell us that the Citron, the Orange, and the Lime are to be found as distinct types in different valleys, even in the wild states; but these observations

do not appear to have been made with that accuracy and critical caution which would be necessary in the case of trees so long and so generally cultivated. With regard to the Shaddock (*Citrus decumana*), it is almost universally admitted as a distinct species, although at present only known in the state of cultivation. It must be admitted also that it appears to present more constant characters than most of the others in the pubescence of its young shoots and in the size of its flowers, besides the differences in the fruit; but Dr. Buchanan Hamilton, who is of great authority on such matters, and some others, are inclined to believe that this also may have originated in the *Citrus medica*. This point requires much further investigation, and a better knowledge of the floras of South-eastern Asia, before we can come to any plausible conclusion. Professor Targioni gives copious details of the introduction into Tuscany and other parts of Italy, of many of the varieties there cultivated, for which we must refer to the work itself. It may suffice, for our present purpose, to extract a few notes on some of the more important races or species according as they may be considered. Among them all the earliest known was the Citron. It is not, however, that fruit nor any other Citrus, according to Professor Targioni, that we read of in the Bible, under the name of Hadar, as is asserted by some, nor yet is it anywhere alluded to by Homer. The first mention we have of it is in a comedy of Antiphanes, quoted by Athenæus, in which it is said that the seeds of the Citron had then recently been sent by the King of Persia as a present to the Greeks. Theophrastus is the first who describes it; he tells us that the fruit was not eaten, but solely prized for its odour and as a means of keeping the moths off woollen clothing. Among the Romans we find an allusion to the Citron in Virgil's *Georgics*, but it does not appear to have been then yet introduced into Italy, for Colummella, long after Virgil's death, made no mention of it, and Pliny, in his paraphrase, as it were, of the passage of Theophrastus, adds that it had been endeavoured to transport plants of the Citron, which he calls *Malus Medica*, or *Malus Assyria*, into Italy, but without effect, as it would only grow in Media and Persia. Palladius, however, in the fifth century, gives many details of the modes of propagating and cultivating this tree, which, he says, he had carried on with success on his Sardinian and Neapolitan possessions. It was, therefore, in all probability, in the course of the third or fourth centuries that the Citron was introduced and established in Italy. The mass of evidence collected by Professor Targioni seems to show that Oranges were first brought from India into Arabia in the ninth century, that they were unknown in Europe, or at any rate, in Italy, in the eleventh, but were shortly afterwards carried westwards by the Moors. They were in cultivation at Seville towards the end of the twelfth century, and at Palermo in the thirteenth, and probably also in Italy, for it is said that St. Dominic planted an Orange for the convent of S. Sabina, in Rome, in the year 1200. In the course of the same thirteenth century, the Crusaders found Citrons, Oranges and Lemons very abundant in Palestine; and, in the following fourteenth, both Oranges and Lemons

became common in several parts of Italy. It appears, however, that the original importation of Lemons from India into Arabia and Syria occurred about a century later than that of Oranges. The Shaddock is believed to have followed a different route in its migration into Europe. Most abundantly cultivated in, and possibly indigenous to, the south-eastern extremity of the Asiatic continent, it is said to have been carried from thence to the West Indies, and from Jamaica and Barbadoes to England early in the eighteenth century. It was, however, certainly previously known in Italy, for it is described and figured by Ferrari, in 1646, as having been sent from Genoa to the garden of Carlo Cadenas, near Naples. There is no record of its first introduction to Genoa, whether from the East or the West. Innumerable varieties of Citrons are cultivated at Florence, where they have ever been great favourites as objects of curiosity as much as for their flowers and fruits. Among them is a very singular one, called Bizzarria, raised by hybridising and cross-grafting, in which the same tree produces Oranges, Lemons, and Citrons, often on the same branch, and sometimes combined into one fruit, a curious case, analogous to that of the well-known hybrid, by grafting between the *Cytisus laburnum* and *C. purpureus*.—*Journal of the Horticultural Society*.

PROPAGATION OF FANCY PELARGONIUMS.—About the beginning of February is as good a time as any for taking cuttings: select some good tops from the very best sorts that are out; get as many thumb-pots as you will require for the purpose; fill them with rich turfy mould, and put one cutting into each pot; but, previous to filling the pots, let them be well drained with broken charcoal or potsherds; then, with a piece of round stick, make a hole an inch deep, fill it with silver-sand, and then put in the cutting, giving the pot a slight tap on the potting-board to settle the soil; dip a piece of stick into some water, and hold it downwards, in order that three or four drops may fall close to the side of the cutting; this will settle the whole together, and the quantity of water will be quite sufficient for three or four days; after that, add a little more in a similar way, or with a fine-rosed watering-pot, as may be thought needful. When you have finished this part of the work, let all the pots be plunged in a slight bottom-heat, say from 65° to 70°; give a little air in the daytime, to prevent the cuttings from damping off. I do not recommend the practice of putting a great quantity of hard-wooded cuttings into one pot; two out of three will take root, and then you spoil several in getting them apart; strong cuttings, stuck singly in pots as directed, and well managed after they have rooted, will make fine specimens by June or July the following season.—*Gardeners' Chronicle*.



A NEMONES and RANUNCULUS still plant for early spring bloom. A number of the Turban Ranunculuses in patches are very showy. *Tulips*; plant immediately. A bed with raised sides six inches high is usually preferred, and having the surface of the bed a few inches higher in the middle than the sides. Let the bulbs be covered four inches deep. *Hyacinths* for a bed should be planted directly. *Auriculas*, *Polyanthuses*, &c.; allow a free circulation of air between the sides of the pots, raise the frame a few inches, and leave an opening. *Carnations*, &c.; have all air possible, but guard from excess of rain and severe frost. *Dahlias*; take up on a dry day; allow the stem to remain about half a yard long at present; in a fortnight afterwards cut it to six inches or less, if tolerably dry. *Chrysanthemums*; allow all air possible, to prevent them being drawn up weakly. Every other watering at the roots must be with liquid manure. Thin the flower-beds, and, if required for exhibition, only retain one flower to a shoot.

PINK AND PANSY BEDS.—Have small sticks pricked among the shoots or round the beds to prevent the plants being twisted off by the wind. *Mildew* sometimes attacks *Carnations*, *Pinks*, and *Pansies*, and causes the leaves to be spotted; dust the foliage under and over with sulphur. *Hollyhocks*—the sooner planted, the better will they bloom. *Lobelias* of the tall class, in beds, should be taken up and placed in shallow pans or boxes, closely together; give but little water during winter; they may be kept in any cool place free from frost and damp. *Verbenas*; keep near the glass, give all air possible; only preserve from fogs and frost, and examine the underside of the leaves to see if green fly be there; if so, fumigate directly. If *mildew* appears, apply sulphur, only give water to the roots to keep the soil just moist.

DRESS FLOWER-BEDS.—Give an addition of fresh soil and manure, divide and replant perennials, biennials, &c. Let a liberal profusion of spring flowering *bulbs* and herbaceous perennials, &c., be planted in beds and borders near to the dwelling-house, as *Crocus*, *Aconites*, *Snow-drops*, *Scillas*, *Hyacinths*, early *Tulips*, &c.; and *Hepaticas*, *Double Primroses*, *Polyanthuses*, *Auriculas*, *Wallflowers*, *Brompton Stocks*, &c.; also the little *Arabis grandiflora*, *Draba aizoides*, *Erica carnea*, *Dielytra spectabilis*, *Sedum oppositifolia*, *Turban Ranunculus*, and *Anemones*, &c. They produce a cheerful appearance during the spring months, and are handsome to be viewed from the rooms. If severe frost occurs, protect beds of bulbs. The stock of bedding plants must be looked after, whether in cutting, pots, or otherwise; allow plenty of air on all suitable occasions; don't over-water, rather have them nearly dry during the season of rest.

IN THE GREENHOUSE, &c.

Pelargoniums.—Repot the show class, give plenty of air, not too much water; fumigate if green fly appear. Stop the lead of every shoot of the large plants which are wanted to be in bloom in June, towards end of month, and also of the young plants struck the past summer, to cause them to push side shoots. *Azaleas*, for early bloom, place in higher heat, and keep those cool which are to bloom late. *Calceolarias*, keep in a cool place just from frost; cuttings strike well now. *Tropaeolum tricolorum*, and the other tuberous roots, must now be potted, if to bloom next season. *T. Lobbianum*, *Hockerianum*, &c., encourage; they will bloom through winter. *Salvia splendens*, *fulgens*, and *gesneriflora* encourage—they are fine

for autumn and winter bloom. *Chinese Primroses*, repot. *Chrysanthemums*, keep in airy cool situations. *Oxalis elegans* and others will bloom by due attention. *Neapolitan and Russian Violets* have in abundance in frames. *Ixias*, &c., now pot and place in a cool situation, or plant out of doors in a warm place. *Cactus truncatus* will now show for bloom. *Cinerarias* keep in a frame near glass, but preserve from frost. A few may be forced for winter bloom; fumigate with tobacco to save from ravages of the green fly,

FORCING STOVE OR PIT.

Now have a stock of all the winter flowering plants brought in; begin with a temperature of about 55°, and increase gradually up to 75°. In addition to all bulbs, see the list in last month's calendar of winter blooming plants.

SHRUBS AND TREES.—If evergreen shrubs and trees were not planted last month as directed, they should be immediately; the earlier the more successful.

Plant Roses now; it is the best time. Give six inches thick of well-rotted dung to all standard and other roses; take off a portion of soil, lay on the manure, and cover with earth. Prune Roses of any class but the China, Tea and Banksian.

BRIEF REMARKS.

EARLY TULIPS.—In many places these are beautifully in bloom, and for the amateur of limited means they are a valuable tribe of spring-flowering plants, and now being the planting season, I shall be glad to see the following in the November Magazine. They are cheap, and easy to cultivate, requiring but little attention; and while they annually adorn the flower-clump, or sitting-room window, their numbers will increase, until the only difficulty will be to find room for them. During April and May they add an inexpressible charm to the flower-border, and do not withdraw their unequalled colours and sweet perfume until their place can be supplied with the usual bedding-out plants. What, for instance, can be compared with a bed of the Tournesol for the regularity of surface, and the splendour of its two distinct colours? Next in size and beauty is a single variety called Keizar Kroon, which is indeed a noble flower. It has a very bright yellow ground, flaked with a vivid scarlet, and is in every respect "Queen" of the single early Tulips. Rex Rubrorum is a double variety of a brilliant crimson, also very large; a bed of it presents a very regular surface, and long continuance of bloom. Royal Standard is a pleasing flower, with a pure white ground, beautifully flaked with carmine, making a striking contrast. Belle Alliance is another single flower, very attractive, of a vivid red colour, a self. The new scarlet Van Thol is very similar to it, but it has this difference, that it very often breaks into a flaked flower, orange and red. Grand-master of Malta and Bride of Haarlam are very similar in colours, having both pure white grounds, distinctly striped, and flaked with bright crimson. Alida Maria is a flower in the same style, but very dwarf in habit. Superintendent is a fine kind, white, with a violet flake; Conqueror is double and has the same colours. The best double pure white is La Candeur; as single whites, White Swan and Pottebakker are the best. Amongst yellows we have the yellow Van Thol, dwarf and showy, the yellow Pottebakker, and the old double yellow, which is rather later in flowering. From February till May they may be also easily had in flower for the window. In forming a small collection, the following varieties are suitable to begin with:—Van Thol, single and double; Rex Rubrorum, Tournesol, Florentine, and Mariage de ma Fille. The outlay for a dozen of each of these varieties will not exceed the cost of one dozen of first-class Hyacinths; and while the latter have to be bought annually, these will last for years. I would advise one-half the quantity obtained to be planted in autumn, in the flower-border, where they will bloom in

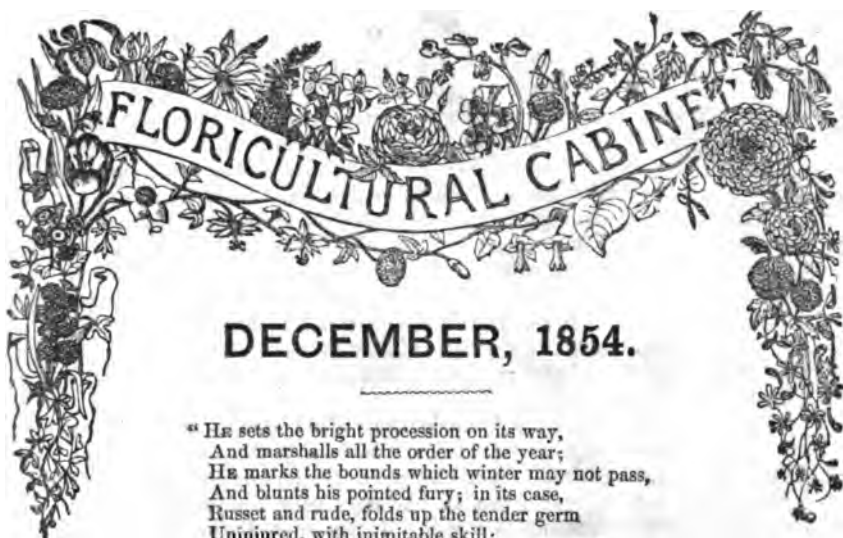
spring, and will be in a fit state for potting for the window next season. The soil in which they are planted should be rather light and rich, and ought to be well loosened to the depth of fifteen inches at least; for although they will grow and flower if stuck into any soil, they will yearly become weaker and fewer in number, until they ultimately disappear altogether. In planting, the roots should be placed about five inches apart, and covered with about two inches of soil. They require no protection, and no further care, except a few stakes to support the taller growing sorts, and to have the surface of the soil stirred occasionally. As soon as the leaves decay, the roots may be taken out of the ground, and placed in a dry place for a time, in order that they may get thoroughly dry before they are put into their winter quarters. Any cool dry place will answer for this purpose; but mice are apt to make sad havoc among them, so keep your eye upon them. I also find it necessary to guard them against the ravages of these vermin in the ground. It is often necessary to remove them as soon as they have done flowering; and in this case I lift carefully, retaining as much soil with their roots as I can, and place them in a shady situation, covering them with soil to about the depth they formerly occupied. If the weather is dry, give them a little water; here they will ripen their growth, and will receive little injury from their removal. These ought to change places with the portion which has flowered in the window, as they will be found apt to become weak under pot-culture; and if the same roots be used two successive seasons, they will probably be of little account the second; this will not, however, be a necessary consequence, but is generally the result of using small pots, and otherwise treating the plants unnaturally. For window decoration, plant in small pots as soon as the bulbs are procured, using 7-inch pots for the purpose; put in each five roots of Van Thol, or three of the other sorts. After potting, they should be placed in some spare corner out of doors, and covered about two inches deep with coal ashes, or any material which can be easily removed. Here they may be allowed to remain till about Christmas, when a portion may be removed to the greenhouse, to forward their blooming season. The Van Thol is the earliest, and ought to be treated as such, except variety is desired; in that case, take *Rex Rubrorum* and *Tournesol*; these will be in flower in February, and, if properly tended with water, &c., will retain their gaiety for at least a month. Of course, provision must be made to keep up a succession of bloom. When done flowering, early Tulips must not be turned out of doors, nor otherwise maltreated; they must be allowed a place in a frame or greenhouse, where they can go gradually to rest. It will not be necessary to give them much water after flowering; but do not allow them to be without it until the leaves show symptoms of decay, then gradually withhold it altogether. Afterwards give them the treatment directed to be given those grown in the flower-border.—*Gardeners' Chronicle*.

ON MIGNONETTE.—Everybody's favourite, and is easily grown, provided good frame or pit room can be secured for it. Two sowings, the one about the first week in August, and the other three weeks later, will furnish plants for both autumn and spring. They may be sown in a small bed, and, when compact plants, may be transferred to 5-inch pots, putting five or six in each pot. They require much care on their removal, and must be placed in a close and moist atmosphere for a week; in fact, they should receive cutting treatment. They enjoy abundance of light; no soil or plan will flower them in perfection unless they are near the glass. A back shelf in a pit, or a frame made up specially for them with the glass thoroughly washed, and the pots placed on, or rather plunged in, ashes, is the best situation for them.

It is necessary, in order to make the plants thick and stout, to pinch the terminal bud of each off when they are thoroughly rooted in the pots, and not before. Air must be given abundantly at all times possible. They must be well secured against severe frosts by plenty of covering, and kept somewhat dry at the root during the dark months of November and December. The soil may be two parts of turfy loam, and the third equal parts manure and leaf soil, to which is added coarse sand and charcoal siftings.—**CLERICUS.**



Rhododendron Thomsonii



"He sets the bright procession on its way,
And marshalls all the order of the year;
He marks the bounds which winter may not pass,
And blunts his pointed fury; in its case,
Russet and rude, folds up the tender germ
Uninjured, with inimitable skill;
And 'ere one flow'ry season fades and dies,
Designs the blooming wonders of the next."

ILLUSTRATIONS.

RHODODENDRON THOMPSONII.

THIS unrivalled species is one of the valuable acquisitions which Dr. Hooker discovered upon the Himalayan Mountains, and subsequently introduced it into England. In its native locality, it is said to grow from eight to fifteen feet high, at an elevation of from 3,300 to 3,900 feet above the level of the sea. Its specific name was given by Dr. Hooker, in compliment to his friend, and companion in his researches in the Himalaya, Dr. Thomas Thompson, Professor in the Glasgow University.

The plant grows freely and blooms profusely. The leaves are of a thick leathery substance, pretty green above, and of a silvery hue beneath. The flowers are produced in terminal, large heads, each having from six to eight blossoms, producing a splendid appearance, highly ornamental and elegant. In our own country, it is stated to grow from two to four feet high, forming a fine bushy plant. It merits a place in every garden, or, grown in a pot or tub, in the shady part of greenhouse, from whence it can be removed to the open air after blooming and being repotted, in order to perfect its growth and properly mature its new wood.

NOTES ON NEW OR RARE PLANTS.

BEFARIA ÆSTUANS.—*The glowing.* (Natural order Ericææ).—Synonyme *Acunna oblonga*.—A shrubby plant, growing to the height of eight feet in its native country, New Granada. Its foliage and younger shoots are very like those of the *Indian Azaleas*. It is a charming plant for the greenhouse, growing freely, and blooming profusely. The flowers are produced in terminal panicles of eight to ten in each. Each blossom has seven petals, forming a bell-shaped flower, about two inches long, and nearly as much across its mouth; they are of a beautiful rose colour. Mr. Lobb discovered it in the province of Chacapoyas, at an elevation of 8,000 feet, and sent it to Messrs. Veitch. It is a *handsome blooming* bushy shrub, and merits a place in every greenhouse. (Figured in *Bot. Mag.*, 4818.)

CEANOTHUS PAPILLOSUS.—A moderately sized shrub, as hardy as any of the other *blue-flowered* species. It is a *profuse bloomer*; the flowers are borne in terminal panicked corymbs, on the side shoots, of a *blue purple* colour, and when in bloom is very handsome. It is a charming plant for training to a wall. It was first discovered by Mr. Douglas, in California, and subsequently by Mr. William Lobb, who sent seeds of it to Messrs. Veitch, in whose nursery, at Exeter, plants have bloomed this year, growing in the open border. (Figured in *Bot. Mag.*, 4815.)

CEREUS LEMAIRES.—Sir W. J. Hooker states, in the *Botanical Magazine*, "two years ago, cuttings of a *flagelliform Cereus*, were sent us from the Royal Botanic Garden of Hanover, bearing the name of "*C. rostratus*, Lemaire." He further observes, that the one now figured does not correspond in structure or flowers with the true *C. rostratus*; he therefore gives it a new name, and dedicates this most superb flowering plant of the Cactææ to M. Lemaire, who has rendered much valuable service in the investigation of this family. It belongs to the *night-blooming* section, the stems being as thick as one's finger, bluntly triangular, and rooting like those of the old *C. grandiflorus*, the well-known *night-blooming Cereus*. The flowers are very large, arising from an angle of the stem, *curving upwards*, twelve inches long, and nine inches across the front of the blossom; the calyx tube about five inches long, and an inch and a half in diameter, clothed with large, long, green and yellow scales, edged with red; within these are the numerous large *white petals*; and the centre of the blossom is *crowded* with numerous *pale yellow stamens*, and a yellow-rayed *stigma* about two inches across. This magnificent flowering plant bloomed in the Royal Gardens at Kew during the last summer. The flowers are powerfully fragrant. Nothing is positively known of its native country; but it happens that I have a drawing made in Antigua of this species, so that it is probably a native of that island. (Figured in *Bot. Mag.*, 4814.)

HYPOXIS LATIFOLIA.—In the spring of 1854 some bulb-like tubers were, along with other rare plants, brought to the Royal Gardens of

Kew, by Captain Garden, from Natal. The tubers in question threw out leaves very like those of some *Orchis*, and from the axils of the leaves the flower-stalks arose, bearing spikes, or rather *racemes*, of rich bright-yellow, six-petalled flowers, each blossom being an inch across, in form like those of the Star of Bethlehem. Each raceme has about a dozen flowers. The flower stems rise about ten inches high, and the spreading leaves become, after blooming is over, about two feet long. (Figured in *Bot. Mag.*, 4817.)

KNIPHOFIA UVARIA. (Synonyme *Tritoma Uvaria*.)—We have several times noticed in this Magazine, the magnificent specimens of this plant growing in the open borders in the Royal Gardens at Kew; the beauty of their numerous *long spikes* of flowers being admired by all visitors, as well as exceedingly ornamental for several months. One of the bushy patches had upwards of thirty spikes of flowers, from three to four feet high, the terminal blooming portion being from eighteen inches to two feet long; each tube-shaped blossom being from three to four inches long, and the *densely-clothed* oval-cylinder shaped spike of some had upwards of five hundred flowers upon it. At their early stage the blossoms are of a bright red, then *tipped* with yellow, and finally *wholly yellow*. It is a native of the Cape of Good Hope. No plant is more hardy or more easily cultivated, and certainly none more worthy a place in *every* garden. (Figured in *Bot. Mag.*, 4816.)

LAGERSTRÆMIA INDICA-VIOLACEA.—The flowers are of a pretty violet colour, which renders it a pretty contrast with the rose and red of other species; worth a place in every greenhouse. In warm situations these handsome flowering plants will endure outdoors without injury, if trained against a good-aspected wall, and bloom beautifully.

DIPTERACANTHUS PANICULATUS.—A neat stove plant, which blooms in such profusion as almost to cover it. The flowers are rather small, funnel shaped, of a fine blue, and produce a charming appearance.

HELIOTROPIMUM MADAME ANNA TURREL.—The cymous head of blossoms is *larger* than of any other *Heliotropium*, of a lively *blue*, far superior to *Voltaireanum*, and are remarkably sweet.

FUCHSIA, MRS. STORY.—Tube and sepals crimson, reflexed. Corolla of fine substance, clear white.

QUEEN VICTORIA.—Tube and sepals bright scarlet crimson, the latter reflexed. Corolla clear white.

F. PRINCE ALBERT (Banks's).—Tube and sepals scarlet crimson, much reflexed. Corolla a rich violet, very handsome.

F. EMPRESS EUGENIE.—Tube and sepals a rosy crimson, shaded with violet inside. Corolla white.

F. LADY OF THE LAKE.—Tube and sepals a deep crimson. Corolla bluish-white.

F. WATER NYMPH.—A bright scarlet crimson *globe*. Corolla clear white.

F. DUKE OF WELLINGTON (Stokes's).—Tube and sepals a rich crimson, corolla violet. Fine formed flower.

F. TRANSCENDENT.—A *very large* white flower, with a lilac and purple corolla.

F. STELLA.—A beautiful rose colour, and a very novel flower.

F. CHARMER.—Tube and sepals white, and the corolla a rich *purple*; also a free bloomer.

PELARGONIUM.—CLOTH OF SILVER.—A superb "*Fancy Class*" flower. White, in the way of "*Delicatum*," but much superior; the upper petals have a very large distinct blotch.

P. EVENING STAR.—It is considered to be the best *Fancy Variety* hitherto sent out. The flower is of fine shape, good substance, a deep purple crimson, with a white centre-eye, and a well-defined white margin.

P. CRYSTAL BEAUTY.—A fine-shaped *Fancy* flower, of a rich rosy-crimson colour, and very showy.

P. LADY HUME CAMPBELL (*Fancy*).—The flowers are of a very bright vivid crimson, with a distinct white eye, and a profuse bloomer.

P. BONNIE LASSIE (*Fancy*).—Flower a bright crimson, with a very distinct white centre; very fine.

P. CONSTANCE (*Fancy*).—Upper petals a deep maroon, with a broad margin of pure white; lower petals white, with a rosy-violet spot on each, and fine form.

PELARGONIUMS, of the class now termed *French-spotted*, each petal having a spot or blotch, of a very distinct colour from the ground one. They are in the way of our English NONSUCH Pelargonium, most strikingly handsome, and free blooming.

AUGUSTE MEILLET.—A handsome salmon-pink, with dark rich maroon spots; very fine.

COLONEL FOISSY.—Beautiful rose, with rich crimson veined spots; fine flower.

ETOILE DE JARDIN.—Pretty rose, with deep crimson spots, of dwarf habit and free bloomer.

GLOIRE DE BELLEVUE.—Flower a deep maroon, edged broadly with pink.

GENERAL EUGENE CAVAIGNAC.—Rose-colour ground, with large deep maroon, veined, blotches; very fine.

GUSTAVE ODIER.—A beautiful rose with crimson spots.

JACQUES DUVAL.—Fine pink, with crimson-maroon blotches; very fine.

JAMES ODIER.—Scarlet and rose, shading with violet, and a pure white centre.

MADAME DE LAMORICIERE.—A pretty peach colour, with deep crimson blotches; very handsome.

SANSPAREIL.—Pretty rose, with a white centre and crimson spots; beautiful.

TRIOMPHE DE LA TOUR.—Rosy-purple, with rich, dark-veined blotches; very showy.

(Thirty others will be described in our January Magazine.—EDITOR.)

PASSIFLORA SHEPHERDI.—Flowers large, of a lavender-blue, rose and white; a fine plant for the greenhouse, or warm situation out-door; superb.

CYTISUS ONOSPERMUM.—Flowers white, and have a fragrance like that of the lily of the valley. Fine for the greenhouse.

NERIUM SPLENDENS GIGANTEUM.—Flowers very large, *double*, of a bright red colour; superb.

LYSIMACHIA LESCHENAULTII.—The flowers are borne in heads somewhat like those of the verbenas, of a rosy-purple colour. It is a profuse bloomer, and continues in flower in the open bed the entire summer; very neat and pretty.

ACHIMENES GIGANTEA.—The plant grows from two to three feet high, pyramidal shaped, and is a profuse bloomer. The flowers are *large*, orange and scarlet, very fine, and blooms all the summer.

ACHIMENES RETICULATA.—The flowers are netted beautifully, producing a very interesting appearance.

BEGONIA OPULIFLORA.—Snowball-like flowered, the pure white blossoms being borne in similar heads to those of our common snowball shrub.

GLOXINIA SPLENDIDA.—The flowers are erect, like those of *Tyafina*, of a rich crimson colour.

NOTES FROM KEW, BY MR. W. S. PRESTOE.

GRIFFINIA HYACINTHINA. (*N. O. Amaryllidaceæ.*)—Flowers in heads like the *Agapanthus Umbellatus*; the ground colour of the flower is a very light blue, the bottom petals margined with a deeper blue, the top petals margined with a very deep blue, and the flower stalks raised about fifteen inches high, of a bright green tinted with a purplish-crimson. This is one of the best stove bulbs we possess, and ought to be in every collection.

JASMINUM SAMBAC-MAJOR. (*N. O. Jasminaceæ.*)—Flowers in trusses from three to six in a truss, whitish, tinted with pink while young, but when old of a faded dull pink; they are very sweet-scented. It is a climbing plant, and merits a place in every stove.

CALCEOLARIA ERICOIDES.—It is a shrubby plant with heath-like foliage thickly set upon the stem, and flowers very freely all up the stem, forming quite a spike of bright-yellow flowers. I think this will make a nice plant for bedding out, as it flowers so very freely, and remains in perfection so long; also for the greenhouse for autumn display. A fine plant in the Royal Gardens has been in *perfection* from the beginning of July to the present time (Nov. 13). It is in a five-inch pot, grows very compact and bushy, and is about fifteen inches high.

BANKSIA ELATIOR.—Leaves lanceolate-serrate, and shining. Flowers in long cylindrical heads, of a greenish colour. It forms quite a tree, and is very showy for a large conservatory.

BANKSIA SERRATA.—Is very similar to the last described, but the flowers are much larger, and of a *darker* green.

B. BANERI.—Leaves cuneate-serrate, slightly covered with hairs. Flowers pyramidal shaped, *very large*, of a dull pink colour; it is, however a very showy one.

B. LITTORALIS.—Leaves lanceolate-serrate, very dark green on the upper side, and the under side whitish. Flowers in a very cylindrical head, of a very bright yellow. It ought to be in every collection, being one of the most showy.

SIPHOCAMPYLUS COCCINEUS. (*N. O. Labeliaceæ.*)—Leaves oblong-serrate, alternate. Flowers of a bright red. It is a very showy stove plant, of easy culture. Flowers very freely at this time of the year, and merits a place in every stove.

MELASTOMA CYMOSA.—Leaves ovate-serrate, opposite, of a very bright green colour. Flowers in a large but not very compact panicle, of a bright pink colour. It is a very showy stove plant, flowers very freely from August to November. It merits a place in every stove, and flourishes in a rich loam with plenty of drainage.

CRYPTANTHERA POHLIANA. (*N. O. Acanthaceæ.*)—Leaves ovate opposite, of a very dark green colour. The wood while young of a dull purple. Flowers are borne in a spike of a very bright pink, nearly a red. It is a most beautiful plant, as it blooms so very freely while young. There are at present some plants in the Royal Gardens, at Kew, each about fifteen inches high, with four large spikes of beautiful flowers. It is easy of cultivation, and ought to be in every collection.

BEGONIA PLATANIFOLIA.—Leaves palmate, very large, of a shining green. Flowers of a pure white, borne in a very large *truss*, many of the blossoms are one and a quarter inch across. It ought to be in every collection of begonias. It requires a good space, as it grows very large, and is in proportion ornamental.

LAPAGERIA ROSEA. (*N. O. Smilacææ.*)—This very charming plant has been in flower in the cold fern-house, in a shady situation, trained to the back wall, where its *bright rosy-red* coloured flowers are most beautiful. It ought to be in every greenhouse, being a free growing and free flowering plant.

CHOROZEMA FLAVA.—Flowers bright yellow; very pretty.

C. ELEGANS.—The upper part of the flower is a bright red, the keel of a rich crimson.

IXORA BARBATA.—Flowers white, which are very fragrant.

CHEIRANTHUS MUTABILIS.—This shrubby specimen has been in flower in the greenhouse all the summer, and is really a nice plant, its varied coloured flowers of rose, lilac and white, in spikes like a single stock are very pretty and ornamental.

FRANCISCEA EXIMEA.—This is a charming plant too, each blossom one and a half inch across, of pale-sulphur, with a rose-coloured centre, fragrant too.

APHELANDRA PORTEANA is a charming plant also; there are some now about eighteen inches high, with fine spikes of orange coloured flowers.

OBLIGATIONS OF ENGLISH POETRY TO THE SCRIPTURES, AS CONNECTED WITH THE VEGETABLE WORLD.

BY MR. PETER MACKENZIE, WEST FLEAN, STIRLING.

SIR,—In the course of my reading, I have seen an article pointing out the obligations of English poetry to the Scriptures : a few extracts from it, connected with the vegetable world, may be instructive to many of your numerous readers. We are told, by those who have studied the subject, that the influence of the Scriptures in moulding and colouring our poetical literature is not confined to the works of the religious poets, but may be traced in every department, and during all the stages of English poetry. Our poets, it is true, have not as a body been addicted to the study of the Bible, nor can the praise be awarded them of having transfused into their writings the moral spirit and genius of Holy Writ. On the contrary, their models have generally been the classical rather than the sacred writers ; and their moral sentiments, as well as their theories of happiness, betray a livelier sympathy with Paganism than Christianity. Still, living in a country where the popular mind has long been penetrated and imbued with Scriptural truths, they have been led insensibly to enrich their compositions with a multitude of poetical ideas derived from “ the images and scenery of the kingdom of Christ.” It is the great and enduring effect of a book cast in the high mould of the Bible, to stir the souls of many beyond the immediate circle of its readers—nay, to shape the public sentiment and elevate the general intellect.

The following extract from Shakspeare’s Henry VIII. may be better applied to our beloved Queen than to any Queen that ever reigned :

“ She shall be loved and fear’d; her own shall bless her,
Her foes shake like a field of beaten corn,
And hang their heads with sorrow. Good grows with her;
In her days every man shall eat in safety
Under his own vine what he plants, and sing
The merry songs of peace to all his neighbours.
God shall be truly known; and those about her,
From her, shall read the perfect ways of honour,
And by those claim their greatness, not by blast.”

The prophet Nahum speaks of figs being so ripe as to fall into the mouth of the eater. Spenser has not overlooked this happy thought :

“ Arch’d overhead with an embracing vine,
Whose branches hanging down seemed to invite
All persons by to taste their luscious wine,
And did themselves into their hands incline
As freely offering to be gathered.”

Still more marked is the following imitation, or rather transcript, of the beautiful language in which our Lord rebukes worldly anxiety :

"Behold, O man, that toilsome pains dost take,
 The flowers, the fields, and all that pleasant grows;
 How they themselves do thine example make,
 Whiles, nothing envious, nature them forth throws
 Out of her fruitful lap. How no man knows,
 They spring, they bud, they blossom fresh and fair,
 And deck the world with their rich pompous shades;
 Yet no man for them taketh pains or care,
 Yet no man to them can his careful pains compare:

The lily, lady of the flowering field,
 The flower-de-luce, her lovely paramour,
 Bid thee to them thy fruitless labours yield,
 And soon leave off this toilsome weary stour:
 Lo, lo; how brave she decks her bounteous bower
 With silken curtains and gold coverlets,
 Therein to shroud her sumptuous ballamour:
 Yet neither spins nor cards, nor cares nor frets,
 But to her mother Nature all her care she lets."

"There is hope of a tree, if it be cut down, that it will sprout again,
 and that the tender branch thereof will not cease, though the root
 thereof wax old in the earth, and the stock thereof die in the ground;
 yet through the scent of water it will bud, and bring forth boughs like
 a plant. But man dieth and wasteth away: yea, man giveth up the
 ghost, and where is he?"—*Job* xiv. 7, 8, 9.

"But when I stood beneath the fresh green tree,
 Which living waves where thou didst cease to live,
 And saw around me the wide field revive
 With fruits and fertile promise, and the Spring
 Come forth, her work of gladness to contrive,
 With all her reckless birds upon the wing,
 I turned from all she brought to those she could not bring."
 BROWN.

"To mute and to material things
 New life revolving Summer brings;
 The genial call dead Nature hears,
 And in her glory reappears:
 But, O! my country's wintry state,
 What second Spring shall renovate?
 What powerful call shall bid arise
 The buried warlike and the wise—
 The mind that thought for Britain's weal,
 The hand that grasped the victor's steal?
 The vernal sun new life bestows
 Even on the meanest flower that blows;
 But vainly, vainly may he shine,
 Where glory weeps o'er Nelson's shrine;
 And vainly pierce the solemn gloom
 That shrouds, O Pitt, thy hallow'd tomb."—SCOTT.

"Consider the lilies of the field, how they grow; they toil not, neither
 do they spin; and yet I say unto you, that even Solomon, in all his
 glory was not arrayed like one of them. . . . Behold the fowls of the
 air, for they sow not, neither do they reap, nor gather into barns; yet

your Heavenly Father feedeth them. Are ye not much better than they?"

"Behold, ye pilgrims of the earth, behold!
 See all but man with unearn'd pleasure gay;
 See her bright robes the butterfly unfold,
 Broke from her wintry tomb in prime of May.
 What youthful bride can equal her array?
 Who can with her for easy pleasure vie?
 From mead to mead with gentle wing to stray,
 From flower to flower on balmy gales to fly,
 Is all she has to do beneath the radiant sky.
 Behold the merry minstrels of the morn,
 The swarming songsters of the careless grove,
 Ten thousand throats; that from the flowering throne
 Hymn their great God, and carol sweet of love,
 Such grateful kindly raptures them emove;
 They neither plough nor sow; no, fit for flail,
 E'en to the barn the nodding sheaves they drove:
 Yet theirs each harvest dancing in the gale,
 Whatever crowns the hill, or smiles along the vale."

THOMSON.

We are told that, of all classes of men, poets are, from their peculiar temperament, the most susceptible of this assimilating influence; it is only what might be expected, that their works, though repudiating the spiritualism of the Bible, should reflect many of its literary beauties; while to others, as Bishop Horne remarks, the finest productions of human art, after a few perusals, like gathered flowers, wither in our hands, and lose their fragrantcy; but these unfading plants of Paradise become, as we are accustomed to them, still more and more beautiful; their bloom appears to be daily heightened, fresh odours are emitted, and new sweets are extracted from them: he who hath once tasted their excellences, will desire to taste them yet again; and he who tastes them oftenest, will relish them best.

REMARKS ON THE CAPE PELARGONIUMS.

BY MR. WILLIAM SMITH, HOPETOWN HOUSE, NORTH BRITAIN.

THE tuberous-rooted Pelargoniums are much less generally cultivated now than formerly, their flowers bearing no comparison to those of the half shrubby kinds. Such may, however, be readily increased by planting pieces of the roots in small pots, in a slight heat; leaving a small portion of the root above ground.

During the growing season, they require water very freely; but as soon as they have *done flowering*, and their leaves begin to turn yellow, decrease the quantity of water gradually. The best method to do this, will be to water once in three days, then once a week, then once a fortnight, and lastly, once a month; by which time they will be com-

pletely at rest, when no water must be given them until they begin to grow again, which may be looked for about February or March. When at rest, any situation where they can be kept moderately dry and cool, will do for them; heat, light, and moisture being unnecessary.

The best time to increase this section of Pelargoniums, is just before they begin to grow. Take off a small tuber or two, where they can be spared, from each plant, and put them into as small pots as they can be placed, just to cover them; place them in gentle heat, giving them but little water till they begin to grow, when they may be removed amongst the established plants, and the ordinary culture given; they may also be increased by seed, which, however, they do not produce so freely as the shrubby species.

In regard to the species that have not been hybridized, of which *P. bicolor*, *tricolor*, *ovatum*, *tetragonum*, *elatum*, *pendulum*, *fulgidum*, *elegans*, &c., form a part, the above authority directs as follows:—"As they are all shrubby species, they require watering all the year, though always carefully; for if the soil gets soddened with water for any length of time, it is in general fatal to the plants. They also require greenhouse treatment during winter and spring. In summer they should be placed out of doors in an open situation, screened from high winds, and set upon a bed of ashes so thick, as to prevent worms from getting into the pot; keep them clear of weeds, tied up neatly, and regularly watered during dry weather. Pot them into larger pots when they require it, the best operation for which is the month of April.

To propagate them, take youngish cuttings off about the month of May; fit some bell or small hand-glasses to such a number of pots as may be required; fill them half full with broken potsherds, rough bits of turf, or any thing that will permit the water to pass freely off; pot in upon them as much compost (loam, peat earth, vegetable soil, and sand, in equal proportions, which is found to be the most proper for them) as will fill up to the top with pure sand, then give it a gentle watering, and insert the cuttings, giving more water to settle the sand close and firm to them. When pretty dry, cover them with the glasses, and place them in a gentle heat; pot them off, when struck, and keep them close and warm till they have struck root again; then give them the ordinary treatment as to situation, air, watering, potting, and so forth."

Propagation of this section by seeds is seldom practised; but some recently raised have proved exquisitely beautiful, and it is well worth any attention in a careful impregnation to obtain further improved varieties. Geranium seeds are best sown soon after they are ripe, provided that does not happen after August, in which case it would be better to delay sowing until February or March. When the seeds are sown, they should be placed in a mild hot-bed, and regularly shaded till they have vegetated, after which they should have been accustomed to the sun and air to harden them previous to their being potted, which should be done when they are about an inch and a half high; their treatment after this differs from that of cuttings, only that they

need not be topped with a view to form bushy plants, as it is not until they bloom that their merits can be ascertained. The young seedlings should be stimulated by growing them in richer soil, and occasionally giving liquid manure.

MANAGEMENT OF THE IRIS BICOLOR.

BY ELLEN PRICE, AN ARDENT PLANT CULTIVATOR.

BEING anxious to assist in spreading information, and observing that recently some notice has been made of Spanish and Persian Irises, I am induced to trouble you with a few remarks on the culture of the Iris bicolor. I have been repeatedly asked how I manage my plants; even during the last spring, three eminent floral amateurs have inquired concerning the treatment of this and other similar plants, and it now being the season of planting bulbs, I hope this communication will be in time for the October magazine. Not having time to answer every separate question of this sort, I take this opportunity of stating how your readers may certainly succeed as respects this singular and beautiful species of Iris (*Hermodactylus*), introduced to our gardens so long ago as the year 1597. I do this the more readily, because its great beauty entitles it to a place in *every garden where a choice collection of plants is kept*; and besides, it forms a necessary link in the large and beautiful family of Iridess. But first, as to the identity of the species; and on this point it may be remarked, that in "Sweet's British Flower Garden," vol. v. page 146, there is the figure of a species of snake's head; yet that is not the plant in question. On the contrary, I believe the Iris bicolor to be identical with the Iris tuberosa, in the *Bot. Mag.*, page 531, though the figure of it there given is very poor. I got the plant from Pontefract eleven years ago, and this is the fifth intervening season it has bloomed under my care. I have about one hundred roots, and forty of them are now blooming. The soil consists of two parts of turfy peat, one of white sand, and one of completely rotten stable manure, all rubbed well together. It is not sifted, but a little of the finest is placed about the tubers when planted. They should be planted six inches deep, and there should be placed below the tubers a compost to the depth of at least nine inches. The plant is hardy, and should be placed in an open situation; it will require no protection except when in bloom, the flowers being often destroyed by spring frosts. I had twenty blossoms completely cut off in the year 1852. The best, and indeed the only time to remove the roots with safety, is when they are in a state of rest. The foliage will be lying down from about the end of May to the middle of June, when they should be taken up and kept in sand, in a moderately dry place, for about a month, and afterwards planted in compost, as above mentioned. If the plants be in pots, they may of course be removed any time; but I have found that the species cannot be kept in health long together in pots. Care should be taken not to

break off the digitals of the root, in taking up and planting ; for if that happen, the root will certainly not bloom. Something of this sort occurs when the roots are left undisturbed the whole summer ; for, being fleshy, the worms and various insects are attracted to them, which gnaw and separate the digitals, if they do not destroy the roots. But there would be no chance of the plant living for a long time in a cool adhesive soil, where worms, &c., would not be likely to abound.

THE MIMULUS.

BY AN ARDENT ADMIRER AND CULTIVATOR AT SCARBOROUGH.

THINKING that an article on this justly admired genus of plants would be acceptable for insertion in your Cabinet, I send you a few remarks on the origin and culture of the Mimulus, as being a flower worthy of much more attention than it now obtains, though I am glad to state it is rapidly extending ; and during the last two years about a dozen most strikingly superb varieties have been raised, the beauty of which, when well grown, is not exceeded by any other flower that I am acquainted with. Single plants I have grown of the dwarf spreading section, two and a half feet high and two in diameter, and elegantly clothed with a profusion of bloom.

Origin.—The Mimulus, or Monkey Plant, is a native of North America. The first species was introduced into England in 1759, and from that time cultivated with great care, until lately, when other superior kinds have taken the precedence.

Culture.—Although it may be thought by some that any hints on the culture of this plant are superfluous, yet I must say that, to bring it to its best state, many things must be attended to which are generally overlooked. As the Mimulus is seen to the greatest advantage when treated as a greenhouse plant, I shall confine myself to this method of cultivation. Soil with this, as with every other kind of flower, is the first thing to be considered ; for, if this be unsuited to the nature of the plant, all labour in every other respect must be unfruitful. The mixture which I have found best adapted is composed as follows :—To one peck of fresh loam I add one peck of leaf mould, well rotted, and half a peck of cows' dung, two years old. These ingredients are well mixed together, and frequently turned over, sprinkling them with lime water, so that no insects remain in the soil ; for, if even they do not entirely destroy the plants, yet they materially impoverish the compost, by their feeding on many particles which would otherwise have sustained the flower. Drainage of the pots is a requisite which I certainly think ought in the second place to be looked after. This precaution to take away all superfluous water seems not to be generally appreciated ; for how many plants do we see in various quarters without any drainage, except one potsherd to fill up the hole at the bottom of each pot, just as if it would have done quite as well had there been no aperture at all. Now, although this is a common practice, yet I can safely say that no plant can live in perfect health without a proper

portion of drainage; and in this respect I must agree with Mr. Forsyth, when he asserts that plants would grow much more luxuriantly if the pots were made with a small rim under them, to allow more drainage; but I must certainly disagree with him in his recommendations of glazed pots, as I myself have tried them, and have found, as I expected, that if used for a time, all my plants must inevitably perish. But, to return to the subject: after having attended to drainage, about the middle of March I take off a quantity of cuttings, which soon make good roots, after which I plant them separately, in small pots at first, and move them gradually into *large ones* until May, when they generally begin to show buds, and about June they are in most beautiful flower. All the blooming season, I roll canvas over the greenhouse, so as to keep off the intense rays of the sun, which take away the colours and dry the soil, so as to make the flowers small; for the *Mimulus* delights in a *damp earth*, yet cannot be seen in perfection when *over-watered*. Placing water in saucers, under the pots, I know to be a common practice, yet it is founded on a gross error; for if we inquire why water is placed under them, we are told, "The *Mimulus* thrives on the banks of rivers; therefore, it is natural for it to have water constantly by it." This is true; yet we are not to consider that the *Mimulus*, in a pot, has not the same freedom of air and soil as it has on the banks of streams; for in the latter position the *water runs away* after the plant has satisfied itself, but in a pot it stays long after all nourishment is gone, and poisons the soil, and both together eventually destroy the plant. The only method to keep the *Mimulus* healthy, with regard to water, is to keep it in as *shaded a position as possible*, and to supply water moderately whenever *it is required*, yet always to allow the superfluous moisture to drain away.

Raising New Varieties.—When the plants are all in bloom, select the best coloured ones, and cross them upon the largest, and *vice versâ*; for the two principal features in a good *Mimulus* are colour and size. If the operation be properly performed, the pods of seeds will begin to swell in a few days, and soon after they will turn brown, and be ready for gathering. After sufficient good seed is collected, it should be sown in pots or boxes, sprinkling it on the surface of the soil; for if covered, *the seeds will decay and never vegetate*. When the young plants have acquired two or three sets of leaves, they should be transplanted into larger boxes, where they will bloom, or, if it be summer, into the open ground, where they make the most healthy plants. When in bloom, the best may be selected, and increased by cuttings, which easily strike. The principal properties, as I have said before, are size and colour, with the two lips forming a good circle. The plants raised from these cuttings should be preserved during winter in a *cold frame*, as they are more tender than the varieties of old standing. When the following spring arrives, they must be treated as directed above for old varieties; and if these new ones be crossed by each other, and so continued for a few seasons, in a little time as fine a progeny will arise as can possibly be expected. I have flowers with *white grounds* marked

and marbled with crimson, purple, scarlet, rose, black, yellow, orange, blue, and pink. I have *yellow grounds* marked and marbled with black, rose, scarlet, white, purple, crimson, violet, and green. To be duly estimated, they must be viewed; they surpass what I can describe.

BOTANICAL SUPERSTITIONS AND DELUSIONS.

BY J. B. DONOVAN, ESQ.

Concluded from page 269.

THE rare but occasional occurrence of vegetation in certain trees and shrubs, happening to take place about the period of our Saviour's birth, induced the superstitious peasant to believe that such trees threw out their leaves with a holy joy, to commemorate that anniversary; as, in like manner, oxen and stags were supposed, and *had been seen*, to kneel down at midnight on Christmas Eve, in humble adoration. Shakespeare has beautifully described this tradition, when the Ghost in Hamlet disappears at the crowing of the cock:—

"It faded on the crowing of the cock.
Some say, that ever 'gainst that season comes
Wherein our Saviour's birth is celebrated,
The bird of dawning singeth all night long;
And then, they say, no spirit dares stir abroad:
The nights are wholesome; there no planets strike,
No fairy takes; no witch hath power to charm;
So hallowed, and so gracious is the time."

An oak of the early-budding species has, for two centuries, enjoyed a fame for pious gratitude; for it was considered a matter of fact with many, that it shot forth its leaves on every Old Christmas-day, and that no leaf was to be seen before, or even after that day, during winter. A lady, in 1786, curious to prove the truth of this assertion, proceeded to Cadenham, in the New Forest, where the oak grew. On the 3rd of January, the usual guide was ready to attend her; and on being desired to climb the oak, and search whether there were any leaves, he said, it would be to no purpose, but if she came on the Wednesday following, she might see a thousand. He was prevailed on, however, to climb up, and, on the first branch he reached, there appeared several new leaves, fresh sprouted from the buds, nearly half an inch long. The guide was more astonished than the lady at this premature production; for so strong was his belief in the truth of the whole tradition, that he would have pledged his life, that not a single leaf was to be seen before the usual hour; but no leaves were to be found *afterwards*, because it was stripped by the numerous parties that were accustomed to visit it on Old Christmas-day. It is a curious fact in botany, that such a budding should take place about that season in this, as well as some other trees.

- There appears to be another early-sprouting oak, near the spot where

Rufus's monument stands. This seems to authenticate the account Camden gives of the scene of that prince's death; for he speaks of the premature vegetation of the very tree on which the arrow of Tyrrel first glanced, and the present tree may be a descendant of that one.

On Christmas Eve, 1753, a vast concourse of people attended the noted thorn at Glastonbury, which was thought to have similar impulses with the New Forest oak; but, to their great disappointment, there was no appearance of its blowing, which made them watch it narrowly on the 5th of January, Old Christmas-day, when it blew as usual. This famous Glastonbury hawthorn was said to be sprung from the staff of Joseph of Arimathea, who having fixed it in the ground with his own hand on Christmas-day, the staff took root immediately, put forth leaves, and the next day was covered with milk-white blossoms, and that it continued to bloom every Christmas-day during a series of years.

Besides the Holy Thorn, there was likewise at Glastonbury, another miraculous tree. This was a walnut tree; which was said never to shoot forth its leaves before the 11th of June, the feast of St. Barnabas. It has long ceased to exist; but while it was standing, it was held in high respect by the credulous.

At Quainton, in Bucks, also, above two thousand persons on one occasion went with lanterns and candles, to view a blackthorn in that neighbourhood, which was remembered to be a slip from that of Glastonbury.

Mr. Gilpin relates a curious story of the groaning tree at Badesly. "About the middle of the last century," says he, "a cottager, who lived in the middle of the village of Badesly, two miles from Lymington, frequently heard a strange noise behind his house, like a person in extreme agony. Soon after, it caught the attention of his wife, a timorous woman; by degrees the neighbours heard it, and it was noised abroad through all the country. It was then plainly discovered to proceed from an elm, which grew at the end of the garden; it was young and vigorous, and to all appearances perfectly sound. All persons flocked to hear it, and it attracted the notice of the Prince and Princess of Wales, who then resided at Pilewell, the seat of Sir J. Worsley, for the advantage of sea bathing. Many causes were assigned, but none appeared equal to the explanation of it. For about twenty months it was an object of astonishment; and a pamphlet was drawn up, descriptive of it.

It was made also the groundwork of a political squib, reflecting on the ministry of that time, in which it was said, the tree had been heard to groan articulately, "O Walp—O Walp—it is thou makest not only me, but the whole nation to groan." The owner of the tree at last, making too rash an experiment, to discover the cause of its sufferings, bored a hole in the trunk; after this operation it ceased to groan; it was then rooted up, but nothing appeared to account for it, and it was generally believed that there was no trick in it, but that it was the result of natural causes.

A groaning board was exhibited to the public in 1682; the advertise-

ment respecting it ran thus :—" At the sign of the Woolsack, in Newgate Market, is to be seen a strange and wonderful thing, which is, an elm board; being touched with a hot iron, it does express itself as if it were a man dying, with groans and trembling, to the great admiration of all hearers. It hath been presented before the King and his nobles, and hath given great satisfaction."

The hazel has been much celebrated for its powers of discernment, a twig of which formed the divining rod for the discovery of mines. An old author on divination describes it as "a strange kind of exploration, and peculiar way of rhabdomancy, used in mineral discoveries. The method of proceeding is, to take a forked hazel, commonly called Moses his rod, which, freely held forth, will stir and play if any mine be under it; and though many have attempted to make it good, yet, until better information, we are of opinion with Agricola, that in itself it is a fruitless exploration, strongly scenting of pagan divination."

It was used also to discover any hidden spring of water; and, though one may seem as incredible as the other, there have not been wanting persons who have lately given evidence in favour of this property, and of that respectability, as at least to suspend a judgment upon so extraordinary a phenomenon. In the twenty-second volume of the "Quarterly Review," will be found the following well authenticated history :—" It is just fifty years since Lady N.'s attention was first called to this subject; she was then sixteen years old, and was on a visit, with her family, at a chateau in Provence, the owner of which wanted to find a spring to supply his house, and for that purpose had sent for a peasant, who could do so with a twig. The English party ridiculed the idea, but still agreed to accompany the man, who, after walking some way, pronounced that he had arrived at the object of his search, and they accordingly dug and found him correct. He was quite an uneducated man, and could give no account of the faculty in him, or of the means which he employed; but many others, he said, could do the same. The English party now tried for themselves, but all in vain, till it came to the turn of Lady N., when, to her amazement and alarm, she found that the same faculty was in her as in the peasant, and on her return to England, she often exerted it, though in studious concealment; she was afraid lest she should be ridiculed, or get the name of a witch: in either case, she thought she should never get a husband.

"Of late years, her scruples began to wear away. When, in 1803, Dr. Hatton published 'Ozanon's Mathematical Recreations,' where the effect of the divining rod is treated as absurd, she wrote a long letter, signing X.Y.Z., stating the facts which she knew. At Dr. Hutton's particular request, she went to see him at Woolwich, and she then showed him the experiment, and discovered a spring in a field which he had lately bought near the new college, then building, which field he afterwards sold to the college for a larger sum, in consequence of the spring. Lady N. afterwards showed the experiment to others in the park at W. She took a thin forked hazel twig, about sixteen inches long, and held it by the end, the joint pointing downwards;

when she came to a place where water was under the ground, the twig immediately bent, and the motion was more or less rapid as she approached or withdrew from the spring; when just over it, the twig turned so quick as to snap, breaking near her fingers, which, by pressing it, were indented, heated, and almost blistered. A degree of agitation was also visible in her face.

"When she first made the experiment, she says, this agitation was great, but has gradually decreased. She repeated the trial in different parts of the park, and her indications were always correct.

"It is extraordinary that no effect is produced at a well or ditch, or where earth does not interpose between the twig and the water. The exercise of the faculty is independent of volition."

The reviewer concludes by saying, "So far our narrator, in whom, we repeat, implicit confidence may be placed."

It would be an endless task to attempt to give an account of the various superstitions which are attached to trees and plants. A glance at a few may suffice to give an idea of the whole. In some parts it is firmly believed that weak, rickety, or ruptured children may be cured by drawing them through a split tree, if the tree be afterwards so bound as to reunite; in other parts, a remedy for the whooping-cough is found in passing a child thrice, before breakfast, under a blackberry-bush, of which both ends grow in the soil. Onions were formerly, and perhaps are now, used, by rustic girls to divine the name of the man whom they are to marry. Various names were formed upon onions, which were then placed in the chimney corner, and the onion which sprouted first, bore the sought-for name. The plant mouse-ear, given in any manner to horses, was believed to prevent them from being hurt in shoeing; mug-wort put into man's shoes, kept him from being weary on a long journey; moon-ear would open locks and bolts, and undo the shackles and shoes from horses' feet—a quality which must have rendered it very valuable to burglars and horse-stealers; and houseleek would shield from lightening any house on which it grew; this privilege of being thunder proof, it shared with the classical bay tree. The mountain ash, rowan tree, or, as it is called in the northern counties, the wigger tree, was of sovereign virtue as a preservative against the machinations of witchcraft. Similar follies are to be observed in all countries. Here is a specimen from the East:—"There is a tree in India, called Peridexion, whose fruit is sweet and useful, so that doves also delight to tarry in it; and the serpent fears this tree, so that he avoids the shadow of it; for if the shadow of the tree go towards the east, the serpent flies towards the west; and if the shadow of the tree reach toward the west, the serpent flies toward the east; and the serpent cannot hurt the doves, the cause of the virtue of the tree; but if any of them straggle from the tree, the serpent, by its breath, attracts it and devours it. Yet when they fly, or go together, neither the serpent or the sparrowhawk can or dares hurt them. Therefore, the leaves or bark of the tree, suffumigated, avert all evil—that is, of venomous beasts." This, though a fiction, is at least a poetical one.

The decay of the bay-tree was formerly considered by the superstitious as an omen of disaster. It is said that, before the death of Nero, though in a very mild winter, all these trees withered to the root (yet surely his death was no very serious disaster), and that a great pestilence in Padua was preceded by the same phenomenon.

The laurel had so great a reputation for clearing the air and resisting contagion, that, during a raging pestilence, Claudius was advised by his physicians to remove his court to Laurentium on that account. It was also supposed to resist lightning, of which Tiberius was very fearful; and it is said, that, to avoid it, he would creep under his bed, and shade his head with the boughs.

In Lower Saxony the peasant girls, on the eve of St. John, hang sprigs of the hypericum, St. John's-wort, against their bed's head or the walls of their chamber. If it remains fresh on the following morning, they are persuaded they will be married within a year; but if, on the contrary, it droops and fades, they have no hope of marriage within that time.

The black hellebore was used by the ancients to purify their houses, and to hallow their dwellings; and they had a belief that, by strewing or perfuming their apartments with this plant, they drove away evil spirits. This ceremony was performed with great devotion, and accompanied with the singing of solemn hymns. In the same manner, they blessed their cattle with the hellebore, to keep them free from the spells of the wicked.

"What magic has bewitched the woolly dams,
And what ill eyes beheld the tender lambs?"

For these purposes, it was dug up with many religious ceremonies, as that of first drawing a circle round the plant with a sword, and then, turning to the east, an humble prayer was made by the devotee to Apollo and Æsculapius for leave to dig up the root; and the flight of the eagle was particularly attended to during the ceremony; for when this bird approached near the spot, during the celebration of the rites, it was considered so ominous as to predict the certain death of the person who took up the plant, in the course of the year. In digging up the roots of some species of hellebore, it was thought necessary to eat garlic previously, to counteract the poisonous effluvia of the plant; yet we find that the root was afterwards dried and pounded to dust, and sniffed up the nostrils in the manner of snuff; as it is related that when Carneades the Cyrenaic philosopher, undertook to answer the books of Zeno, he sharpened his wits and quickened his spirit by purging his head with powdered hellebore.

Formerly, the Gauls never went to the chase without rubbing the points of their arrows with this herb, believing that it rendered all the game killed with them the more tender.

The verbena or vervain was thought good against venomous bites, and was suspended round the neck as an amulet; it was also recommended as a sovereign medicine for various diseases. In Britain it has

fallen into disuse, in spite of a pamphlet written expressly to recommend it, directing the root to be tied with a yard of white satin ribbon round the neck, and to remain there till the patient recovered. It was formerly the custom to plant asphodel and mallow around the tombs of the deceased. St. Pierre, after dwelling with some earnestness on the property of such customs, quotes the following inscription, engraven on an ancient tomb:—

“Au-dehors je suis entouré de mauve et d’asphodele, et au-dedans je ne suis qu’un cadavre.”

The fine flowers of the asphodel produce grains, which, according to belief of the ancients, afforded nourishment to the dead. Homer tells us, that having crossed the Styx, the shades passed over a long plain of asphodel. A poet of the present day informs us, upon grave authority, that the spirits of the martyrs lodged in the crops of green birds have their dwelling

“In Eden’s radiant fields of asphodel.”

REMARKS ON THE PAPAVER NUDICAULE AURANTIA.

BY MR. JOHN STREET, OF KIRK, BY PRESTON KIRK, EAST LOTHIAN, N. B.

IN your July number, I notice the figure of *Papaver nudicaule aurantia*, from which circumstance I am induced to send the following facts for insertion in an early number. *Papaver nudicaule* has continued to grow, flower and ripen its seed here for more than thirty years, sows itself as plentifully as the corn poppy, and sports in several varieties, pure white and shades, sulphur or straw colour. *P. aurantia* semidouble, major, minor and yellow; and this year, complete full double, flowers full up in the centre, and I have kept a specimen as witness. Also some plants produced flower petals, parts white and parts yellow (party colours). If it had been convenient to preserve the thousands of self-sown plants here, other beautifully distinct varieties would most likely have been produced. In fact, it is biennial here.

The *P. orientale* and *bracteata* I cultivate near together: they both ripen seeds, and from these seeds I obtained a distinct variety, which seems to be akin to both. The late Curator Botanical, Edinburgh, remarked it as the best he had seen. Its colour, shading and seed-vessels are different to the originals.

I see you intend to figure the hybrid *Cistuses*: the spotted rosy red and spotted yellow, I fancy will make a pretty contrast.

Pedigree, I cultivate by seeds, a rather large group of species and varieties in open borders, which bear seeds and sow themselves. By that natural process I have four varieties, one larger flowers, larger seed-vessels, and leaves very like common sage, which I compared.

Many years ago I obtained seeds, brought from Italy—one an up-

right shrub ; it produced white flowers, about five inches diameter ; it gave one kist of seeds, which I sowed in a pot, and it produced three varieties, one the red and spotted, the other two large flowers of other shades, but not a white ; these are all hardy, but do not produce seeds.

REMARKS UPON AN HYBRID PLANT PRODUCED FROM RHODOTHAMUS CHAMÆCISTUS, AND RHODODEN- DRON ARBOREA.

BY MR. LAING, GARDENER AT THE EARL OF ROSSLYN'S, DYSART HOUSE, N.B.

In your August number I observe a copious extract from M'Intosh's Book of the Garden, on hybridization, in which a remark is made about the crossing of *Rhodothamus chamæcistus* with *Rhododendron aboreum* of India, which I was so far fortunate at the time to effect. The seed-pods swelled and ripened most admirably, and to satisfy inquiry I will state the result. The seeds were sown the following February, came up freely, but to my great disappointment turned out to be the same as the female parent (*R. chamæcistus*), with one exception, which of course has not yet proved what it may be. It has somewhat the *appearance* of its male parent (*R. aboreum*), but time alone will tell its flowering properties.

There is no branch of horticulture in which are more delights, and more important results to be obtained, than in the cross-breeding of the various species and varieties of plants ; for example, compare the geranium, the pansy, &c., as now exhibited on our show tables, with original species, and you will find the difference most astonishing ; indeed, so great, that no person unacquainted with the subject would fancy they were from the same miserable origin.

MISCELLANEOUS.

PROPAGATION OF AURICULAS.—Auricula growers are aware that they cannot propagate their plants at pleasure, but must often wait patiently for years before they can get an offset from a favourite variety. By the following plan, I have often got prime young plants of such as I wished to increase. When I repot, about the first week in August, those with long tap roots I cut well back ; the part of the root I thus cut from favourites, I pot, leaving nothing but the cut part above the earth. I then give them a little water, with a syringe or watering pan, and in two or three weeks perhaps as many buds will make their appearance round the old root. These grow very fast, and may be potted singly, in autumn or spring, according to their size. —Y. Z.

LECTURE ON PEAT CHARCOAL. By Prof. Way.—Prof. Way remarked (says the *Chemist*) that, independently of the noxious gases resulting from the putrefaction of animal matter generally, and which consisted principally of sulphuretted hydrogen and sulphuret of ammonia, each particular animal substance, excretion or otherwise, had its *peculiar* odour, which, although abundantly perceptible by the senses, and, in many cases, as in musk, almost inexhaustible, was inappreciable in weight; therefore, by deodorising a large amount of odour, it was not to be inferred that a large amount of manuring matter was thereby secured. He then enumerated the various single and double deodorisers that had been employed. He referred to Sir William Burnett's excellent application of chloride of zinc, and to the ordinary chloride of lime; to gypsum (sulphate of lime), and its conversion, in ammoniacal atmospheres, into sulphate of ammonia and carbonate of lime; to the agreeable odour of pure ammonia, and its power of giving intensity to odours of a disagreeable character, which intensity was lost when the ammonia was withdrawn; to sulphate of iron (green copperas), which when powdered and thrown into tanks turned black, on account of the sulphuret of iron formed on the decomposition of the sulphuretted hydrogen present. He then proceeded to the consideration of charcoal as a deodoriser. He gave an interesting statement of the peculiar action of charcoals in general, arising, he believed, from the great amount of surface their spherical interstices presented, and of the peculiar action and superior value of animal charcoal over all others. He referred to the theory he had been led to form of this peculiar difference, and to a very successful imitation of animal charcoal, which he and Mr. Paine had made, in reference both to deodorising and decolourising properties, from the light porous silica rock, found on Mr. Paine's estate in Surrey, and when broken up and steeped in heated tar, was put into a gas retort, where the tar was burnt off in the state of very pure gas, and a residuum left of the new silicated charcoal in question. He explained that in charcoals it was not the amount of carbon they contained that constituted their value, but the mode in which the carbon was distributed; that animal charcoal contained only 10 per cent. of real carbon, while wood charcoal contained 90 per cent. He referred to the large amount of water, 50 or 60 per cent., which peat charcoal took up, and to the fallacious dry state of the manures, with which this water-carrier was mixed. He feared this mode of introducing water in a latent state into manures, in many cases, gave a turn in the scale more in favour of the manufacturer than of the farmer. He doubted whether peat charcoal could be used economically for the purpose of soaking up tank water; if not, he feared it would prove of no advantage, in other respects, as a remunerative agent to the farmer. It had been long before the public, but had not progressed in market value, as it would have done had its application been successful. He considered it to lead to much error in practice, that the exact nature of the action of charcoal on ammonia was not better understood by the public. Fresh burnt charcoal would absorb a large quantity of ammoniacal gas, but it

was a mistake to suppose that it would consequently abstract ammonia from a liquid impregnated with it; on the contrary, water had the power of displacing from charcoal the whole of the ammonia it had received in a gaseous state within its pores. Peat charcoal did not either make manure or separate it from sewage; it simply rendered manure portable. He exhibited a striking experiment, showing the power of dry peat charcoal to arrest odours. Two open tumblers were half filled with the most offensive sewage-matter Professor Way could obtain, and the surface of each mass covered with a film of thin paper and a thin bed of powdered peat-charcoal resting upon it. These tumblers were in this state handed round to the members, who ascertained the perfect manner in which the sewage-matter was thus rendered no longer offensive to the smell. He then gave an interesting account of the process of Mr. Stothert, by which sewage-matter was reduced, by a double action of purification, into clear water and inodorous precipitate—a process admirably adapted for sanitary purposes, although not for those of agriculture, as the more valuable manuring matters were held in solution and carried off in the pellucid liquid, while the precipitate was comparatively an inert mass.—(*Mechanics' Magazine*.)

PELARGONIUMS.—As you have already given the mode of growing these useful plants for exhibition, perhaps the following remarks on their cultivation for the greenhouse of a private gentleman may not prove unacceptable, as my mode of treatment, though nothing new, has invariably been followed by an abundant head of bloom and healthy foliage. After the plants have flowered the first time, they are removed into the open air, placed upon cinder ashes to protect them against the worms, and are cut down in the beginning of August. In a fortnight, the shoots will have pushed to about an inch, when I proceed to repot them. My practice is, to shake off all the old soil, and to prune the roots to within three inches of the stem. This process, I consider, favours the production of a fine head of bloom, by checking the rapid and vigorous growth of new wood. The plants soon recover, and the destruction of the old roots is succeeded by new and active fibres from the points where the knife had been employed. The following compost I use for the winter potting, viz., two barrowfuls of loam, two of leaf mould, half a barrowful of peat, with one peck of silver sand. The plants are placed where they are partially shaded, receiving a little of the morning sun only. In three weeks, they will have made new roots sufficient to bear removing to a more open situation, where they will receive plenty of light and air. Here they remain till the weather becomes wet and cold, when I remove them into the greenhouse. I place them as near the glass as possible, and admit all the air I can, to prevent their being drawn, and water sparingly during the winter months. In October, I stop the shoots to within four or five inches of the stem. In the beginning of December, I prepare to repot for blooming, using the following soil, which is richer and stronger than the compost previously employed: To two barrowfuls of loam I add two of cow dung, one year

old (I prefer it of this age, as it affords nourishment a greater length of time), half a barrowful of leaf mould, and one peck of silver sand. If the loam be heavy and strong, I add peat, but this is not necessary if the loam is of a sandy nature. I give good drainage, by using plenty of potsherds, and shift into pots a size larger than the plants were previously grown in—either eight or nine-inch ones. I rub off nearly all the old soil, and fill up with the compost above described. The house is kept closed for a fortnight or three weeks; and when I see the plants begin to root freely, I give air as the weather permits. The temperature of the house ranges from forty to fifty degrees Fahr. When the plants are growing freely, I keep them well tied out, forming them into broad and uniform heads. I begin to syringe the plants about the middle of February, choosing the afternoon of a fine day for the purpose, and continue this operation twice a week, till the plants begin to show their bloom. During the months of February, March, and April, I water twice a week, and increase the quantity as the weather becomes warmer. I fumigate for destruction of green fly, and shade from powerful midday sun.—*Gardeners' Chronicle*.

ON THE PLANTS OF CHINA, BY MR. R. FORTUNE.—The tea plant was now frequently seen on the hill sides, this being the outskirts of the great green tree country, to which I was bound. Large camphor trees were frequently seen in the valleys, particularly near the villages. Fallow trees were still in extensive cultivation; and, at this season of the year, being clothed in their autumnal hues, they produced a striking effect upon the varied landscape. The leaves had changed from a light green to a dark blood-red colour. Another tree, a species of maple, called by the Chinese the fung-gze, was also most picturesque from the same cause. These two trees formed a striking contrast with the dark green foliage of the pine tribe.

But the most beautiful tree found in this district is a species of weeping cypress, which I had never met with in any other part of China, and which was quite new to me. It was during one of my daily rambles that I saw the first specimen. About half a mile distant from where I was, I observed a noble-looking fir tree, about sixty feet in height, having a stem as straight as the Norfolk Island pine, and weeping branches, like the willow of St. Helena. Its branches grew, at first, at right angles to the main stem, then described a graceful curve upwards, and bent again at their points. From these main branches, others, long and slender, hung down perpendicularly, and gave the whole tree a weeping and graceful form. It reminded me of some of those large and gorgeous chandeliers sometimes seen in the theatres and public halls in Europe. What could it be? It evidently belonged to the pine tribe, and was more handsome and ornamental than them all. I walked—no, to tell the plain truth, I ran—up to the place where it grew, much to the surprise of my attendants, who evidently thought I had gone crazy.

When I reached the spot where it grew, it appeared more beautiful

even than it had done in the distance. Its stem was perfectly straight, like *Cryptomeria*, and its leaves were formed like those of the well-known *arbor-vitæ*, only much more slender and graceful. This specimen was fortunately covered with a quantity of ripe fruit, a portion of which I was most anxious to secure. The tree was growing in some grounds belonging to a country inn, and was the property of the innkeeper. A wall intervened between us and it, which I confess I felt very much inclined to get over; but remembering that I was acting Chinaman, and that such a proceeding would have been very indecorous, to say the least of it, I immediately gave up the idea. We now walked into the inn, and, seating ourselves quietly down at one of the tables, ordered some dinner to be brought to us. When we had taken our meal we lighted our Chinese pipes and sauntered out, accompanied by our polite host, into the garden, where the real attraction lay. "What a fine tree this of yours is! we have never seen it in the countries near the sea where we come from; pray give us some of its seeds." "It is a fine tree," said the man, who was evidently much pleased with our admiration of it, and readily complied with our request. These seeds were carefully treasured; and as they got home safely, and are now growing in England, we may expect in a few years to see a new and striking feature produced upon our landscape by this lovely tree. Afterwards, as we journeyed westward, it became more common, and was frequently to be seen in clumps on the sides of the hills. This tree has been named the *Funeral Cypress*.—*Fortune's Journey to the Tea Districts of China*.

HINTS FOR THE CULTIVATION OF BABIANAS, GLADIOLI, IXIAS, SPARAXIS, TRITONIAS, &C., &C., IN THE OPEN BORDERS, BY AMICUS.—In September, or at the latest, in October, prepare your beds or borders by well digging them a spit deep, burying a stratum of good rotten manure at the bottom. The surface soil should be rendered open by mixing sand with it, and being well broken in the digging; plant the bulbs in clumps or rows, from $2\frac{1}{2}$ to 6 inches deep (depending on size of root, and sort), taking care to cover them one inch deep with sand, previous to re-covering with the mould. After the roots are planted, rake the ground well, giving it a southern inclination; if possible, keep it free from weeds and stir it occasionally with a small fork, which accelerates their growth; in case of very severe frost, cover the surface of the ground two or three inches deep with dry litter or sea sand. The different varieties will flower from May till August.

BLOOMING THE YELLOW NOISSETTE ROSE.—Complaints have been made that this rose is difficult to bloom; and having had several of them to flower very successfully for the last two years, I send you the method I have used, hoping it may be useful to some of your readers:—The plants are planted in rich mould, in the open border. When the buds begin to show, I place a hand-glass over each rose tree; and, to insure plenty of air, I put four small pots under the four corners of the hand-

glass. It will be necessary to shade in hot sunshine. I find, if they are not covered with a hand-glass, that the outside petals rot before the inner ones open. I had six fine noisettes this year, on one small plant; and there will be a second crop about the end of July.—*An Amateur.*

ON PLANTING A TULIP ROOT.

BY JAS. MONTGOMERY.

Here lies a bulb, the child of earth,
Buried alive beneath the clod,
Ere long to spring, by second birth,
A new and nobler work of God.

'Tis said that microscopic power,
Might through its swaddling folds descry
The infant-image of the flow'r,
Too exquisite to meet the eye.

This, vernal suns and rains will swell,
Till from its dark abode to peep,
Like Venus rising from her shell,
Amidst the spring-tide of the deep.

Two shapely leaves will first unfold;
Then, on a smooth elastic stem,
The verdant bud shall turn to gold,
And open in a diadem.

Not one of Flora's brilliant race
A form more perfect can display;
Art could not feign more simple grace,
Nor nature take a line away.

Yet, rich as morn of many a hue,
When flushing clouds through darkness strike,
The tulip's petals shine in dew,
All beautiful,—but none alike.

Kings, on their bridal, might unrobe
To lay their glories at its foot;
And queens their sceptre, crown, and globe,
Exchange for blossom, stalk and root.

Here could I stand and moralize:
Lady, I leave that part to thee.
Be thy next birth in Paradise,
Thy life to come, eternity!



CHRYSANTHEMUMS are the most valuable plants we have for autumn decoration, either for the greenhouse or the flower garden; they fill up a blank that no other plants we have could do, supplying a profusion of beauty of almost every colour. They have become a desideratum in all well-managed flower gardens, having the facility to plant a proper proportion of the most showy kinds, which ornament them, when the season keeps open, up to December. In order to have the flower garden lively as possible, the succession to Chrysanthemums must be made up with evergreen shrubs; it is readily done at a trifling cost by plunging in potted plants of *Laurustinus*, *Aucuba*, myrtle-leaved, broad-leaved, and variegated *Box*; gold and silver-striped, green-leaved, yellow and crimson-berried *Hollies*; *Arbutus*, *Rhododendron*, *Mahonia aquifolia*, *Phillyrea*, *Arbor vite*, *Bay*, *Kalmia latifolia*, dwarf *Laurels*, *Daphne pontica*, *Cedars*, *Cotoneasters*, &c. A garden thus furnished produces a very cheering appearance; and those who have not seen one so ornamented cannot adequately conceive of its beauty and finished neatness. This attention most amply repays for the small expense, producing a lively appearance, instead of having bare beds for several months. If any *Tulip* bulbs be still out of ground, plant them as early as possible.

There are a number of very handsome single and double varieties of *Anemones*, which are highly ornamented to a flower garden, whether in patches in the beds, or as an edging. To bloom well next season they must be planted immediately.

The *Gentiana acaulis* is a most charming spring flower, suited admirably for edging or patches. Its intense blue flowers, in contrast with *Anemones*, *Hepaticas*, and similar early-blooming plants, is very striking. Attention will be necessary to protect the tender kinds of herbaceous, by a layer of dry leaves, pots, boughs, or branches of evergreens, &c., also the stems of tender climbing and other *Roses*, by tying a covering of furze over them, that, whilst it fully protects, admits sufficiency of air for the well-being of the plant.

Auriculas and *Polyanthuses* require plenty of air in fine weather, and but little water. The like attention will be required to *Carnations*, *Pinks*, &c., kept in pots. *Dahlia* roots should be looked over, to see if any are moulding or likely to damage.

Let the roots be dry before they are laid in heaps. Newly planted shrubs should be secured to stakes, so that they are not loosened by the wind. Where it is desirable, reduce patches of border flowers to a suitable size. Ten-week *Stocks* and *Mignonette*, in pots for blooming early next spring, to adorn a room or greenhouse, must not be over-watered, and be kept from frost. A cool frame, well secured by soil or ashes at the sides, and plenty of mats or reeds to cover at night, will answer well. During hard frosts, if additional soil be required for flower beds upon grass lawns, advantage should be taken to have it conveyed at the time, so that the turf may not be injured by wheeling. Pits or beds for forcing *Roses*, &c., should be prepared early in the month. Tan or leaves are most suitable, unless there be the advantage of hot water or steam. Newly planted shrubs of tender kinds should have their roots protected by laying some mulch. Suckers of *Roses*, &c., should now be taken off and re-planted for making bushes, or put in nursery rows. Soils for compost should now be obtained. Beds of *Hyacinths*, *Tulips*, &c., should have occasional protection. Any roots not planted may successfully be done in dry, mild weather, till February. Sweet *Violets*:—plant these little gems as much as possible along the sides of walks, near seats, rooms, banks, under trees, &c.; they are so highly fragrant as always to be acceptable, and more especially being early

spring flowers. Discourage all the spring ornaments as much as possible: Crocuses are pretty flowers, always gay in sunshine, and give a peculiar cheerfulness to every place they occupy; never be sparing in the quantity of them near a dwelling-house. Do not omit the first flower that awakes thee from the repose of winter—

"A flower that first in this sweet garden smiled,
To virgins sacred, and the SNOWDROP styled."

FORCING STOVE OR PIT.

Aconites, Crocuses, Violets, Mignonette, Stocks, Tulips, Cyclamens, Narcissus, Lilies of the Valley, Hepaticas, Primroses, China Primroses, Persian Irises, Cupheas, Hyacinths, Pinks, Carnations, Tree Carnations, Heliotropes, Scarlet Geraniums, Salvias, Gardenias, Roses, Azaleas, Cinerarias, Jasmines, Honeysuckles, Deutzias, Rhododendrons, Persian Lilacs, Rhodoras, Ribes, Mezeriums, Correas, &c., required to bloom from January, should be brought in early in the present month. The plants should be placed at first in the coolest part of the house; never allow them to want water. Pots or boxes containing bulbous-rooted flowering plants, as Hyacinths, Narcissus, Persian Irises, Crocuses, &c., should occasionally be introduced, so as to have a succession of bloom. Cactus plants that have been kept out of doors, or in the greenhouse, should occasionally be brought into the stove for flowering, which gives a succession. If any of the forced plants be attacked with the green fly, a syringe with diluted tobacco-water will destroy them. If the leaves appear bit, and turn brown (the effect of damage by red spider), a syringe of soap-suds at the under side of the leaves is effectual to destroy them. The glutinous substance remaining not only kills those it is applied to, but prevents others returning there. The old *Eranthemum pulchellum*, with its fine blue flowers, *Justicia speciosa*, *Gesneria zebrina*, *Justicia pulcherrima*, *Aphelandria cristata*, *Poinsettia pulcherrima*, *Cestrum aurantiacum*, and *Begonia fuchsoides*, are fine winter ornamental blooming plants.

IN THE GREENHOUSE, &c.

As much fire as will barely keep out frost will only be necessary; and, for the purpose of drying up damp arising from foggy nights, or from watering, all possible air should be admitted in the daytime; but mind to keep the plants from damage by frost.

Fuchsias and greenhouse plants, intended to be inured to the open air, will require to have protection at the roots, and probably, for the first winter, over the tops too, by furze branches, canvas, wicker baskets, mats, &c. If greenhouse plants require watering and syringing over the tops, let it be done in the morning of a clear day, when air can be admitted; and towards evening a gentle fire-heat should be given. Calceolarias must be in a cool situation. Whilst in a cool and moist atmosphere, the shoots will often push at the underside numerous rootlets; where such are produced, they should be taken off and potted. Pelargonium plants for exhibition should be repotted by the middle of this month; according to the size of the plants must be the pots. The smallest sized pots in which plants are to be when shown are the 24's, eight inches in diameter, and the largest sized are eleven inches in diameter. The plants need not be potted into these sizes now, but a size less, and in February be repotted into their final pots. The plants must not be crowded together, but be kept apart. Cinerarias are often attacked at this season by the green fly; let the plants be placed in a hot bed frame, and be fumigated with tobacco-smoke at the first appearance of the insects.

BRIEF REMARKS.

THE EXOTIC AND OTHER FLOWERING PLANTS AT THE CRYSTAL PALACE AND GARDENS AT SYDENHAM.—So little is publicly known about the plants at the Crystal Palace, except that which is gathered during a momentary admiring glance, as the visitor strolls through the building, that we think a few explanatory details may not be misplaced.

In the first place, then, the celebrated botanical collection of Messrs. Loddiges at

Hackney was the basis of this Crystal Palace collection. It was a fortunate coincidence that, at the very time when the Sydenham project was under consideration, Messrs. Loddiges had resolved to retire from business, and to sell off the whole of their unequalled collection—unequalled so far as private nurserymen are concerned. Nay, the very sale catalogue was being drawn up, when Sir Joseph Paxton, by authority of the Crystal Palace directors, stepped in and bought the entire collection by private contract, giving one round sum for the whole of the plants. The plants have remained at Hackney until room was prepared for them at Sydenham; they have been conveyed by waggons and carts on the ordinary road from one place to the other; and a most formidable undertaking this has been, considering the distance, the many thousands of plants, and the large size of numbers of them. Scarcely a day has elapsed, for many months, on which these plant-loads have not been seen wending their way from north to south.

The collection at Messrs. Loddiges' was in every way remarkable. It was about ninety years ago that Conrad Loddiges began to form it, and it gradually became one of the most celebrated in Europe. This was the parent collection, from whence that at Sydenham has sprung. A large portion of plants have been conveyed from the one place to the other, but there are still many to come. The collection comprises numerous specimens remarkable either for their size or for some other characteristics. There is, for instance, the *Areca catechu*, whence the betel is obtained; there is the *Artocarpus integrifolia*, which, though a small tree here, rises to sixty feet in its own native clime; there is the *Piper nigrum*, the black-pepper tree; the clove-tree, and others yielding spices; the strange and fearful poison-tree of Java; the *Calmus rudentum*, which rises to a height of 200 feet in its Asiatic home; the fantastic umbrella-tree, with its broad-spreading leafy summit; the cabbage-palm; the *Elais Guineensis*, now of such extraordinary value to us as the source of palm oil, which is pressed out from the pulpy part of the fruit; the *Phoenix fariniferi*, yielding a kind of sago; the *Latania Borbonica*, the monarch of Loddiges', which must have a paragraph to itself presently; the *Theobroma cacao*, whence cocoa and chocolate are obtained; the cow-tree of South America, so named from the milky juice which it yields; the banana; the plant which yields balsam of capivi; the *Cordia manilla*, remarkable for its rope-like structure; the golden-leaved *Chrysophylla macrophylla*, which in Sierra Leone attains a height of 100 feet; the *Bertholletia excelsa*, the magnificent tree which yields the Brazil nut; the mahogany-tree. Indeed, dwarfish as most of the plants necessarily are in comparison with the sizes which the species would attain in their own native homes, they present, besides beauty of appearance, abundant materials for instruction in respect to the economical and medicinal uses to which they are applied.

The Loddiges' collection, then, was the basis whereon Sir Joseph Paxton proceeded to form the Sydenham collection. But, empowered by the company, he has likewise made large purchases elsewhere. He has obtained, from one quarter or another, as many as 8,000 camellias, and 10,000 geraniums, fuchsias, and calceolarias. There are no fewer than 600 roses in the Alhambra alone, forming elegant parterres around the marble fountain in the Court of the Lions. One very interesting purchase has been made—a collection of seventy-two orange trees and twenty-four pomegranate trees, brought from the Chateau de Neuilly after the death of the late King Louis Philippe. The remarkable shape and large size of the orange trees, and the brilliant green of the leaf, render them very conspicuous and ornamental objects; while pomegranate trees carry us in imagination to Eastern climes, where all sorts of beautiful princesses ate of their fruit in enchanted castles and fairy palaces.

Besides purchases, the Sydenham collection has been enriched with many botanical gifts, and will doubtless be enriched with many more, for there is abundant liberality of the kind among wealthy persons of taste in this country. They will give, if their gifts seem likely to be appreciated and taken care of, as we have had proof in the noble presents of books to the British Museum, and of pictures to the National Gallery—despite of our lamentable want of good rooms in which to place the pictures. Her Majesty has given two specimens of the *Araucaria excelsa*, and about a dozen other plants. The Duchess of Gloucester has given a collection of

white camellias. There has been presented a fine American aloe by the Misses Ranall of Blackheath; an *Araucaria excelsa*, by Mr. Lloyd of Wickham; an American aloe, by Miss Millington of Greenwich; a *Ficus macrophylla* from Australia, by the Botanical Society; an *araucaria*, by Earl Powis; a splendid Australian flowering-plant, by Mr. Fairrie of Liverpool; a small collection of plants, by Earl Mansfield, from Caen Wood; a magnificent aloe, which had been brought, when young, from the Palace of the Cæsars at Rome, by Mrs. Jenkyns of Wells Deanery; a variegated aloe, by Miss Blaxwell of Camberwell; two *araucarias* by Mr. Wells of Red Leaf; a striped aloe, by Lieutenant-colonel Tweedie of Bromley; a *Dracena draco*, by Mr. Keen of Croydon; two American aloes, by Mr. Letts of Dulwich; a noble *araucaria*, by Messrs. Veitch, of Exeter; a collection of aquatic plants, by the Duke of Devonshire; and a large number of other gifts, which, though the company very properly record them, need not be catalogued here.

The arrangement of so fine a collection has necessarily occupied much and weighty attention. It was at one time intended to arrange all the plants within the building geographically, in some determinate order, according to the countries to which the respective species belong. But difficulties have presented themselves. Although there are ten architectural courts to illustrate ten different epochs of art, it by no means followed that the company possessed, in equal ratios, plants belonging to all the various countries represented by those courts; and it might very likely be, that the botany of some countries, if unrelieved by specimens from other places, would look meagre and poverty-stricken in respect to colour or size, and would not aid in carrying out the picturesqueness which has been so much studied in the general arrangement of the fine arts departments. It was decided, therefore, to adopt a systematic arrangement in connection with the ethnological specimens, and also in one important part of the park or grounds; but to arrange everything else in such forms of beauty as would contribute to the general effect of the Palace, considered as a whole—to make the plants and flowers a graceful decoration to the building itself, and to the courts and halls which occupy so large a portion of its area.

The ethnological groups, the Nations, are really instructive, for their botany as well as for their characteristics of human tribes. There are a few of them at the northern end of the building, but the main portion is at the southern end. Here we have the Australian, the Tasmanian, the Papuan, the Tahitian, the Negro, the Bosjesman, the Hottentot, the Bornean, the Sumatran, the American-Indian, the Esquimaux—all are given with the scrupulous regard to feature and form which Dr. Latham is well fitted to insure; and such simple adjuncts are provided as may assist in illustrating the dress, and weapons, and usages of the people. Then, in each bed or parterre which contains a group, Sir Joseph Paxton has brought his botanical knowledge to bear, by planting trees obtained from or indigenous to the country inhabited by that group. When the plants are more fully labelled than they yet are—and we recommend the utmost possible liberality in this respect, as a matter that will be sensibly appreciated by the mass of general visitors—these nations will be very instructive, and we can learn a little concerning the botany of tropical climes.

These national groups, we have said, offer facilities for a systematic arrangement of the plants; but in other parts of the building, the picturesque has been studied rather than the systematic, without, however, an entire neglect of the latter. For many months has the process of arrangement been carried on by a whole army of gardeners, under Sir Joseph Paxton as commander-in-chief, and Mr. Eyles, as one of his two head generals. Trees and shrubs of considerable size, mostly in boxes, are ranged along both sides of the nave at appropriate intervals, forming a beautiful vista as seen from either end. Then, in front of all the eighteen or twenty courts, Fine Art and Industrial, beds of beautiful flowers are arranged, with winding paths between them, to afford access to the courts, an arrangement singularly novel and refreshing to the eye. A third repository is found in some of the courts themselves, where, as in the Alhambra, plants and flowers can be introduced in harmony with the general style and purport of the court. Another source of arrangement is afforded by the two marble basins—one marble *in presenti*, and the other marble *in futuro*: the elegant vases and circular recesses around these basins are filled with exquisite flowers; while, when the hydraulic arrangements shall have been completed, the basins themselves will be filled with aquatic plants, including

the widely-renowned *Victoria regia*. Wherever there are any large spaces between or beyond these courts, these have been filled with plants, sometimes mounted upon or grouped around mounds of root-work. Lastly, suspended from a great height, are upwards of 300 wire flower-baskets, of elegant contour, which furnish a very striking addition to the grandly-beautiful appearance of the nave. Each basket is, internally, a kind of wire hemisphere three or four feet in diameter; and this is enclosed within an outer basket of graceful form and florid decoration—florid, so far as wire-work can be. Each basket is well packed with moss round the interior; rich mould is placed within the moss, and flowers are planted in the mould. The baskets are hung up at regular intervals along both sides of the nave by wire-ropes, which can be raised or lowered; and an ingenious plan is adopted for watering the flowers in the baskets. Flowers with bright colours and drooping tendrils are purposely selected; and nothing can be more pleasing than the appearance thus presented.

A visitor, leisurely strolling along through the building will meet with many plants which attract attention. At one place is the "Elephant's Foot," or *testudinaria*, one of the oddest of all odd plants. It looks like a block of wood, brown and hard, and furrowed over in a strange manner; it has just two delicate little branches at the top, but else it looks like a huge lifeless lump; it grows on rocks and barren places. There are multitudes of palms and ferns, which deserve our notice, for the grandeur of their leafy summits. There is the Caffre bread-tree, with its strange shell-like exterior and pulpy interior. There are the tiny oaks in front of the Nineveh Court, grown from acorns brought from Nineveh itself. There are the Egyptian palms, near the Egyptian colossi and sphinxes—palms which, like some other things at the present day, have suffered through the war in the East; for they were detained so long at Malta while the *Himalaya* was conveying troops to Turkey, that they have not yet recovered from the ill effects of their journey. There are the pomegranate-trees, fittingly placed near the Alhambra, and looking beautiful with their small delicate leaves. There is a goodly number of the orange-trees, which will hold up yet more grandly when they are dressed in their new boxes or cases. There are creepers which, next year, will have crept up to the second tier of girders—some forty feet from the ground.

We have spoken once of the *Latania Borbonica*, the tallest, and bulkiest, and heaviest plant in the building: it was Loddiges' most choice palm, and has always been highly valued. It is about five-and-thirty feet in height; and at Hackney it had not room to grow, for its top was flattened against the glass roof of the palm-house. Here, however, at Sydenham, it has everybody's permission to grow as tall as it likes. The stem is brown and smooth, covered with a yellowish cuticle in the lower part, and with a peculiar hairy-like envelope higher up; and it has a beautiful plume of fan-like leaves at the summit. There is an interesting bit of history connected with this palm. It was brought originally from the Mauritius, and was once in the collection of the Empress Josephine at Fontainebleau; it was purchased thence by Mr. Evans, of Stepney, and at his decease, in 1814, it came into the possession of Messrs. Loddiges. At that time it was only five feet in height; but in forty years it grew sevenfold. The tree itself weighs upwards of a ton, and, when packed in a box of solid earth, eight feet square, the ponderous mass weighed no less than fifteen tons. When, therefore, the time came for removing the tree from Hackney to Sydenham, great preparations had to be made. Messrs. Younghusband, who have removed the materials of the old Crystal Palace from Hyde Park to Sydenham, and most of the plants from Hackney to Sydenham, were intrusted with this duty also. A very strong carriage was made, weighing seven tons, and having enormously broad wheels; and on this the tree was placed, strongly incased in timber, with iron bracings, and shored up on either side. Thus arranged, on one fine day towards the end of July, Messrs. Younghusband harnessed about thirty horses to the carriage, and drew the *Latania Borbonica* in triumph through the streets of London. The fan-like leaves sometimes swept against the three-story windows of the houses, and we may be pretty sure the boys of London had a rich treat in following the waggon.

The plants at Sydenham, as every one is aware, are not confined to the interior of the building. There is a park, which, when completed, will be as instructive to

the botanical student as attractive to general visitors for its fountains. And here we will venture to give a few words of advice to visitors, by way of parenthesis. In fine weather, enter the Palace from the railway by way of the park. Do not feel compelled to trudge along the hundreds of feet of glazed corridor, gallery, passage, and wing, and to ascend the formidable flights of stairs, and to pass through so much of the refreshment department before entering the building. There is no occasion for this. There is an entrance into the park immediately adjoining the railway station, and you get into a scene of beauty at once. You have the yet unfinished, but even now striking Rose Temple immediately before you; you have fine gravel-walks winding between grassy plots and beds filled with lovely flowers; you have noble terraces on the left, on the balustrades of which are statues, vases filled with flowers, and some of Louis Philippe's Orange-trees; and lastly, you have the finest of all possible views of the Crystal Palace itself; for from no point does the grandeur of its garden front become so perceptible as the south-east, within a short distance of the railway station. Of course, in unfavourable weather, it is a good thing to have a covered passage-way from the station to the palace; but at all other times the park route is to be preferred; you are pleased at the outset, and enter the building determined to be pleased with that which is to come.

The Park, so far as plants are concerned, will present very different appearances in different parts. The upper terrace, close to the building, has little besides flowers placed in vases. The lower terrace forms part of the Italian garden, which is laid out with beds of graceful shape, filled with choice shrubs and flowers. Below this is the English garden, presenting, both in its general arrangement and its plants, an analogy to the pleasure-ground or garden of an old English mansion. Many of the trees which formerly occupied this spot have been retained, as forming suitable ornaments for such a garden. There is one cherry-tree which perhaps may, in future years, be pointed out as a memorial; for Sir Joseph Paxton sat under that tree while he sketched the vast idea of the Crystal Palace and its Park.

We have said that one of the two modes by which a systematic arrangement of plants will be adopted, will be put in force in the Park. Under the care of Mr. Milner, who is second in command out of doors, as Mr. Eyles is within, this park-system will gradually be carried out in a somewhat remarkable way. There is to be an Arboretum—a classified arrangement of trees and shrubs. This Arboretum is to assume the form of a broad, well-made gravel-path, bordered on either side with the classified plants. The path will not be straight and monotonous: it will begin near the railway station; it will wind about in graceful curvatures; it will follow in part the borders of the tidal lake, and carry the visitor within easy reach of the geological and fossil specimens; and it will bend east and north of the great fountains until it comes to an end near the north wing of the Palace. Throughout the whole length of this path, the trees, and shrubs, and hardy plants will be arranged according to the system of Jussieu. There will be abundance of labels or inscriptions to denote genera and species, and so forth. Speaking in general terms, and without reference to minute correctness, the Park will ultimately be bounded by the Palace and its wings on the west, and by the Arboretum on the east—the two meeting on the north and the south.

It is obvious at a glance, that many months must elapse before such an Arboretum can be completed; but it is no more than just towards those concerned, to know that plans are in progress for imparting system as well as beauty to the arrangement of the large and fine collection of plants belonging to this company. There is a rugged hilly spot on the south margin of the Park, which is now being formed a collection of ferns, built up on a mass of rock-work, or rather root work, in rather a singular way; but this will form no component part of the Arboretum.—*Chambers' Journal*.

HOLYTHOES.—Culture.—Plants, if transplanted into the open ground in *autumn*, are very liable to rot during winter, more especially if the soil be of a wet and cold description; the better plan is to put them into six or eight-inch pots, place them in a cold frame, give a supply of air by raising the *bottom* of the frame, and remove the glass-light on fine sunny days. Plant out in spring in *well-manured soil*.

SUGGESTIONS FOR EXHIBITORS OF HOLLYHOOKS.—Quality, rather than size and length of *spike*, should be the first point of consideration. The petals of the flowers should be of a thick substance, the edges smooth and even, the florets, which occupy the centre of the blossom, must be *compact*, closely arranged, rising in the middle to half a globular form, with a *stiff guard petal* (the outer petal is meant) extending about half an inch, or in proportion to the size of the centre ball, so that the different parts of the flower have an uniform appearance. The arrangement of the flower on the *spike* should be regular, not crowded together in a confused mass, nor loosely hanging with open spaces between each flower, but so disposed that the shape of each may be distinctly seen, and fully blown, the uppermost covering the top; a few small green leaves between the flowers increases the beauty of the spike. As a last point, it is highly important that the colours be bright, strong and distinct.

THE PINK.—At the termination of another season, and while the blooms of 1854 are fresh in our memory, we will briefly record our impressions of what has been doing with the pink since our last notice in the *Florist* for August, 1854; and this is the more necessary, as there are so many *new varieties* coming under notice for the first time. The early blooms this season had a tendency to be rough on the edge and but imperfectly laced. As the season advanced they bloomed much better. The display of this flower at the Royal Botanic Society's July exhibition was the best of the season, the flowers being generally as good as we remember to have seen them, being well laced, of good size, and without confused centres. Allowing for the influence the season has exercised on some varieties, our opinions given a twelvemonth since have proved tolerably correct. In speaking then of Mr. Bragg's flowers, we placed James Hogg as the *best*, and it undoubtedly is, although the lacing is occasionally too faint. The blooms of this variety, exhibited at Basingstoke, by Mr. Surman, gardener to J. C. Roberts, Esq., Twyford, near Winchester, showed as perfect a pink as we remember to have seen. Dr. Maclean's flowers have exceeded our expectations, having all—with the exception of Great Criterion, the plants of which suffered so much during the long, severe winter, that they never finally recovered—proved most satisfactory. New Criterion is a most superb flower, and opens dark purple, which changes to rosy purple as it ages, and is in either state a charming flower, full and smooth on the edges. Brunette, a heavily laced dark variety, is also a bold, noble flower, and has the largest petal and widest marking of any flower we know, and, heavily laced as it is, there is a large space of white in each of the large broad petals. Adonis, another of Dr. Maclean's seedlings, is a chaste, smooth flower, very clear in its marking, petals smooth, and laced with soft rosy purple. Mrs. Norman, as shown by Mr. Baker, of Woolwich, has a very fine petal, and is altogether a first-class flower. Hale's Field Marshal and Hale's Mr. Weedon are two useful evenly-laced flowers. Turner's Richard Andrews is a large well-laced flower, and may be termed a broad-petalled Whipper-in, as it resembles that variety, but has a wider and smoother petal. Duke of Devonshire is a flower with a smooth, well-shaped petal, as full as Great Britain, and, like that variety, has too many petals, and its size can be reduced by leaving plenty of buds. Looken's John Stevens and Juliet are promising flowers, the former a dark purple, and the latter a light purple-laced variety; also Mr. Hoyle and Mr. Hobbs, red-laced flowers of good average quality, and good exhibition flowers. Norman's Napoleon is very dark-laced, a striking flower with a large bold petal, but is rather thin. Colchester Cardinal has proved a fine flower, with first-rate properties, having a very smooth stout petal. Of older varieties, Maclean's Criterion stands at the head; it has been very fine this season, and fuller than is often seen. Bragg's Jupiter has been very fine, and President and Purple Perfection have been shown good. Optima, Ada, Kate, Mrs. Wolf, Sarah, Lord Charles Wellesley, Arthur, Beauty of Salt Hill, Constance, Esther, Sappho, Lola Montes, Richard Smith, Titus, Lord Valentia, Perfection and Hurdstone's Fanny, have all been exhibited in very good condition, and are generally very good flowers. We have seen a few yearlings that possess excellent properties, but refrain from enumerating them until another season has confirmed their being dissimilar, and desirable new varieties, as they appear at first to be. Some of the best flowers we have had were produced from plants wintered in small pots and planted out in spring, and, considering the small space they occupy during the winter, and there being no risk of losing them should the season be unfavourable, this plan should be more generally adopted.—*Midland Florist*.

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